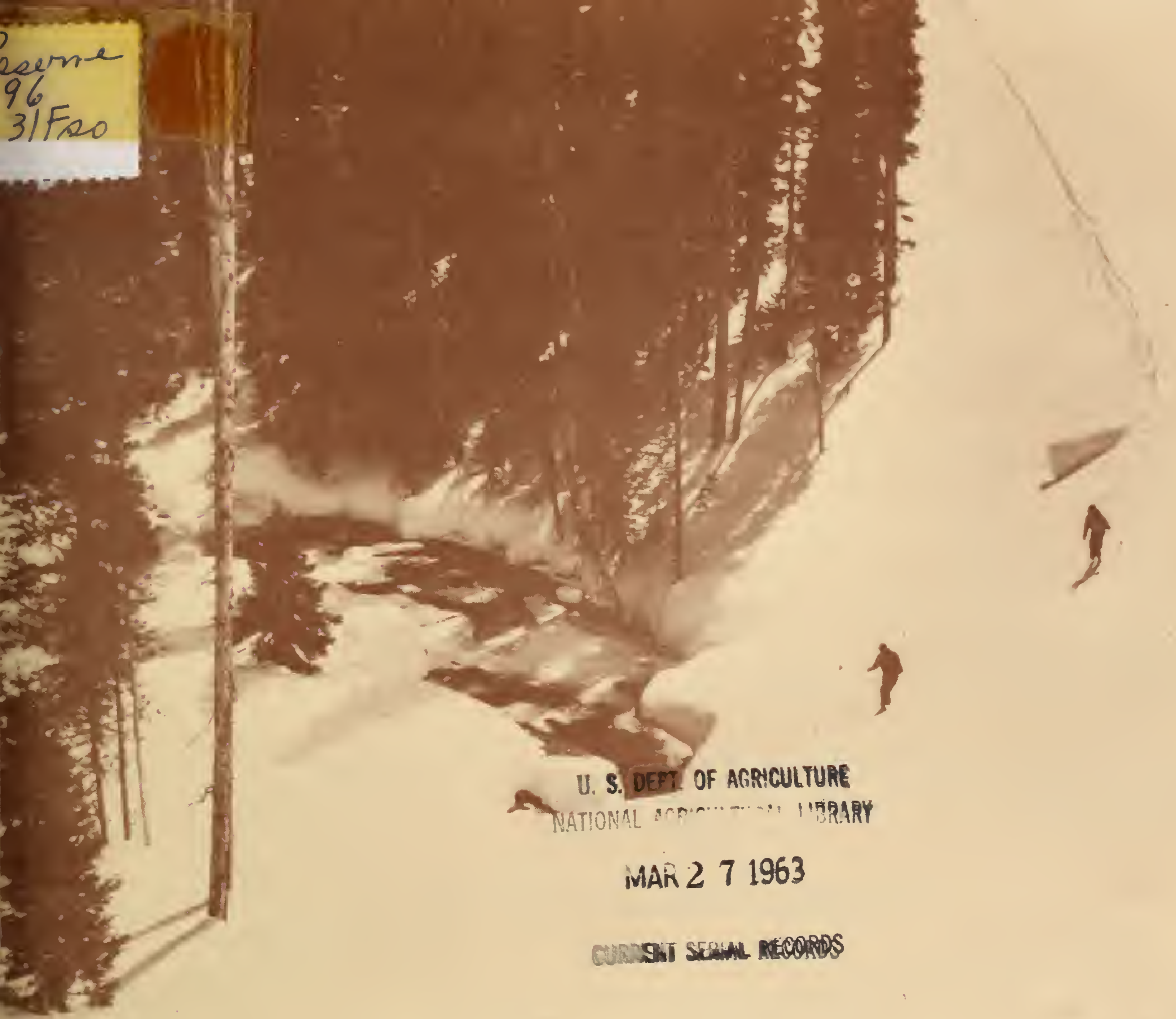

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE···SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

AS OF
MAR. 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
Western United States	Monthly (Feb.-May)	Portland, Oregon	All Cooperators
STATES			
Alaska	Monthly (Mar.-May)	Palmer, Alaska	Alaska S.C.D.
Arizona	Semi-Monthly (Jan.15 - Apr.1)	Phoenix, Arizona	Salt R. Valley Water Users Assoc. Ariz. Agr. Exp. Station
Colorado and New Mexico	Monthly (Feb.-May)	Fort Collins, Colorado	Colo. State University Colo. State Engineer N. Mex. State Engineer
Idaho	Monthly (Jan.-June)	Boise, Idaho	Idaho State Reclamation Engineer
Montana	Monthly (Jan.-June)	Bozeman, Montana	Mont. Agr. Exp. Station
Nevada	Monthly (Jan.-May)	Reno, Nevada	Nevada Dept. of Conservation and Natural Resources - Division of Water Resources
Oregon	Monthly (Jan.-June)	Portland, Oregon	Oreg. State University Oregon State Engineer
Utah	Monthly (Jan.-June)	Salt Lake City, Utah	Utah State Engineer
Washington	Monthly (Feb.-June)	Spokane, Washington	Wn. State Dept. of Conservation
Wyoming	Monthly (Feb.-June)	Casper, Wyoming	Wyoming State Engineer

PUBLISHED BY OTHER AGENCIES

REPORTS	ISSUED	AGENCY
British Columbia	Monthly (Feb.-June)	Water Rights Br., Dept. of Lands, Forests and Natural Resources, Parliament Bldg., Victoria, B.C., Canada
California	Monthly (Feb.-May)	Calif. Dept. of Water Resources, P.O. Box 388, Sacramento, Calif.

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED

MARCH 8, 1963

Report prepared by

W. T. FROST, Snow Survey Supervisor

and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

THOMAS P. HELSETH
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

F. EARL PRICE
DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON

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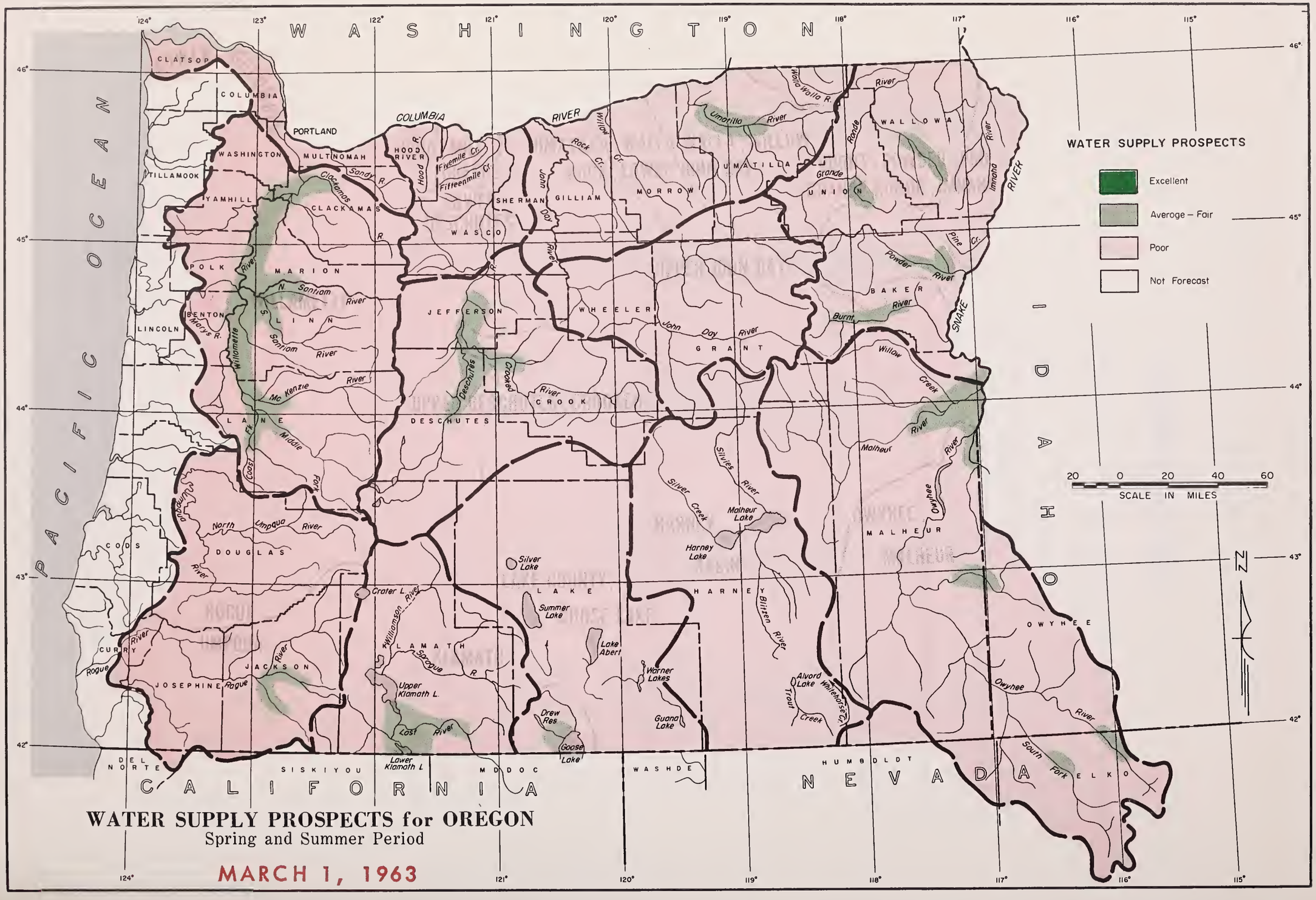


WATER SUPPLY PROSPECTS for OREGON

Spring and Summer Period

MARCH 1, 1963

WATER SUPPLY OUTLOOK for OREGON

MARCH 1, 1963

The 1963 irrigation water outlook in Oregon is extremely poor , except for those irrigators who have adequate stored water supplies. Snowpack is at the all-time low as measured at 150 snow courses, and summer flow of streams will be greatly reduced as a result.

SNOW COVER

Water content of the mountain snowpack averages only 20 percent of the March 1 normal. Many Oregonians have been astounded by the lack of snow.

SOIL MOISTURE

Moisture in the soil mantle on the upper watersheds is very adequate with many soils reported to be saturated.

RESERVOIR STORAGE

Water stored in 23 major irrigation reservoirs is 105 percent average. A few reservoirs are sufficiently "short" on storage that lands served by them will have possibility of late season shortages. They are as follows: Agency Valley and Warmsprings in Malheur county; McKay in Umatilla county; Fish Lake and Fourmile Lake in Jackson county.

STREAMFLOW

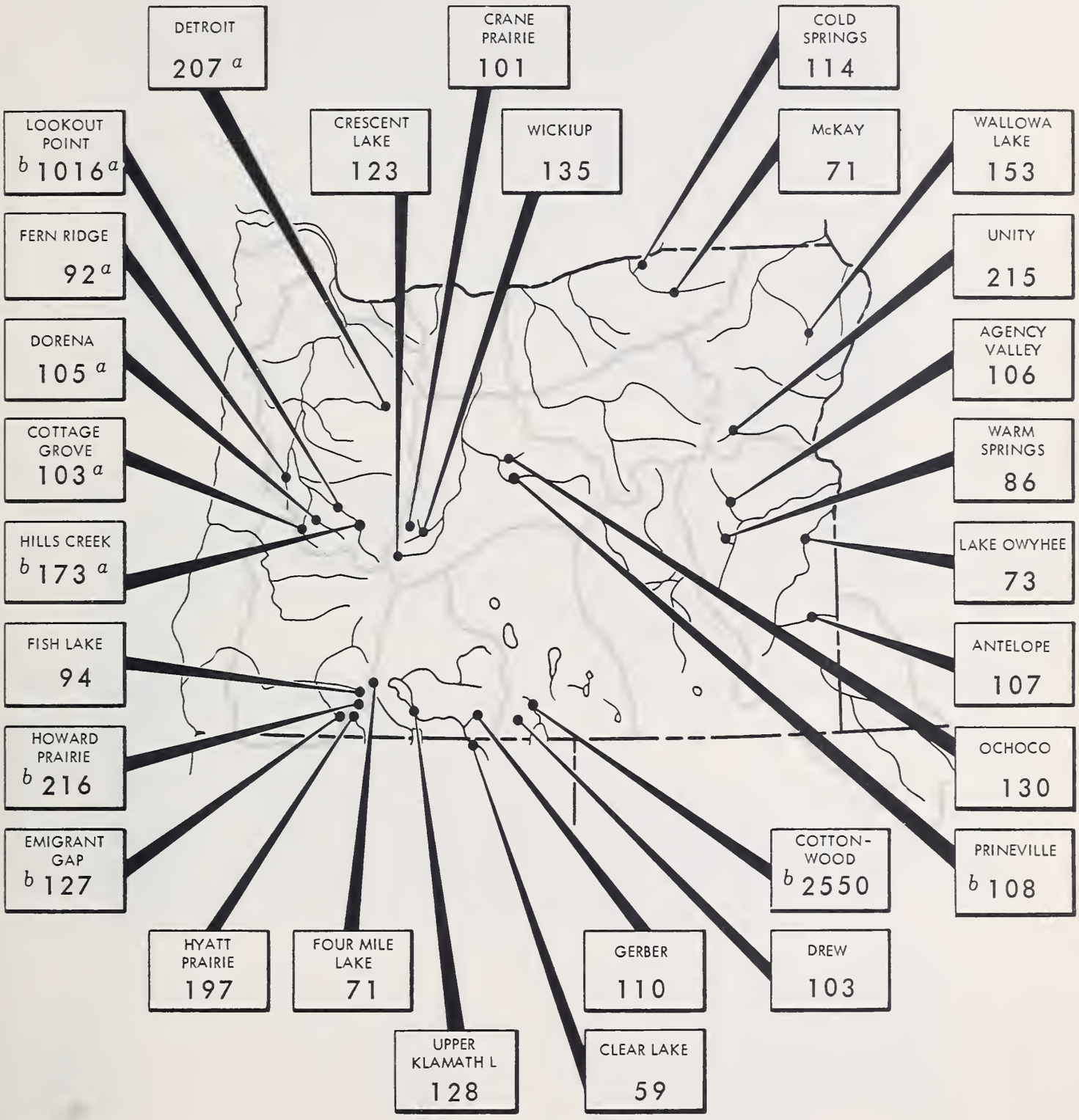
Forecasts for the irrigation season, April-September, vary from 16 to 18 percent average on Lost River and Owhyee River up to 68 and 74 percent in the Wallowa region.

Many areas will have streamflow as "short" as they experienced in 1961 or 1959 while some will have less than that.

Most small streams will have extremely short flows, possibly furnishing only one irrigation this season.

STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

MARCH 1, 1963

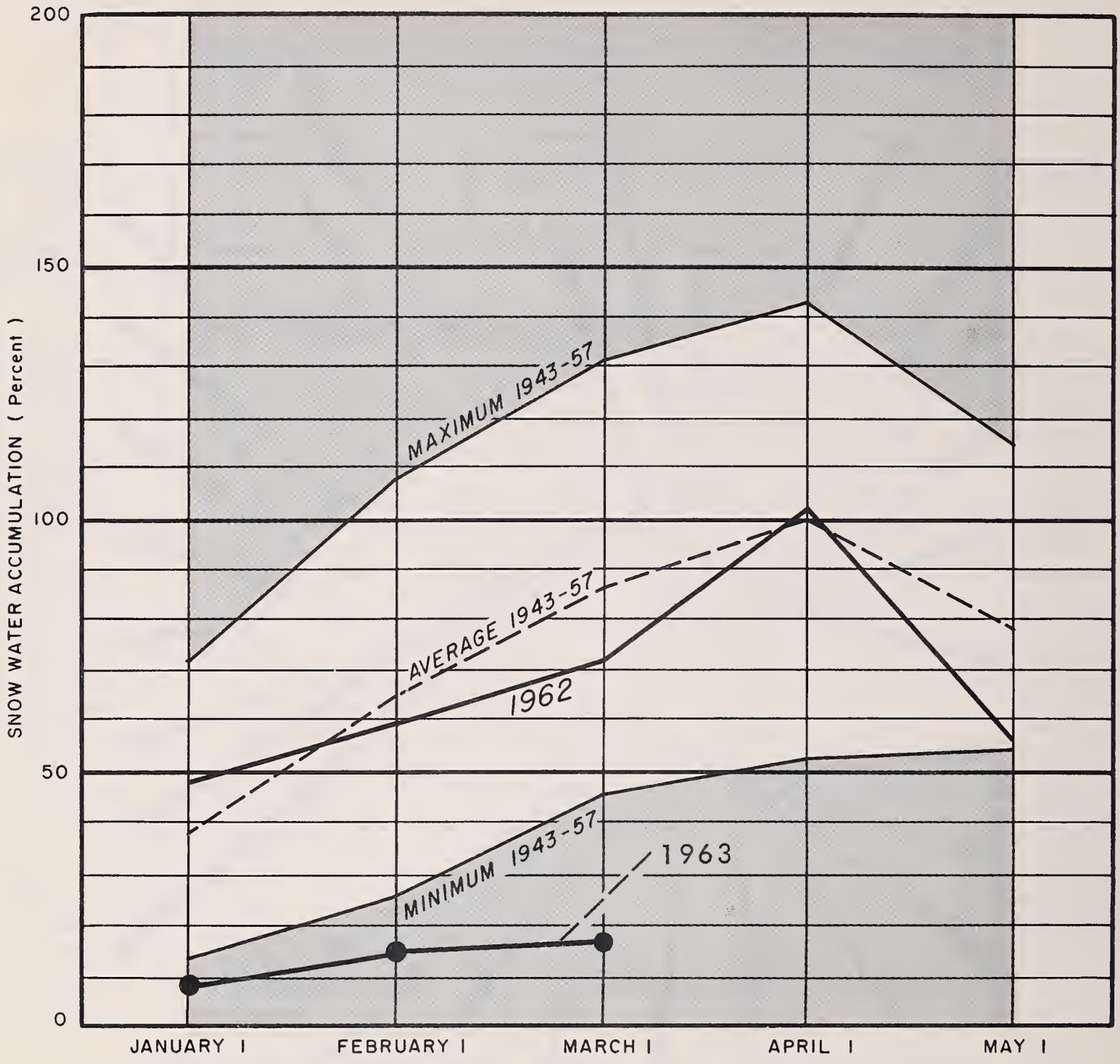


(a) Multiple purpose reservoir - space reserved primarily for flood runoff.

(b) Short record - compared with last year on this date.

SNOW WATER ACCUMULATION in OREGON

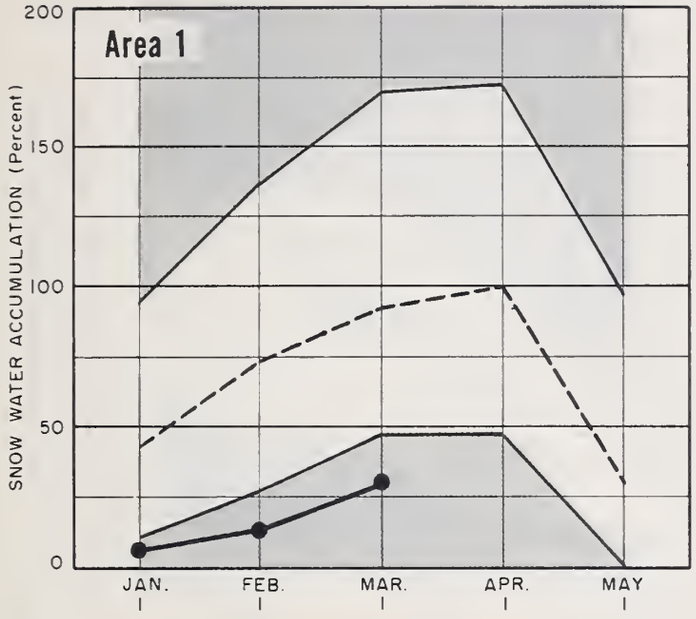
MARCH 1, 1963

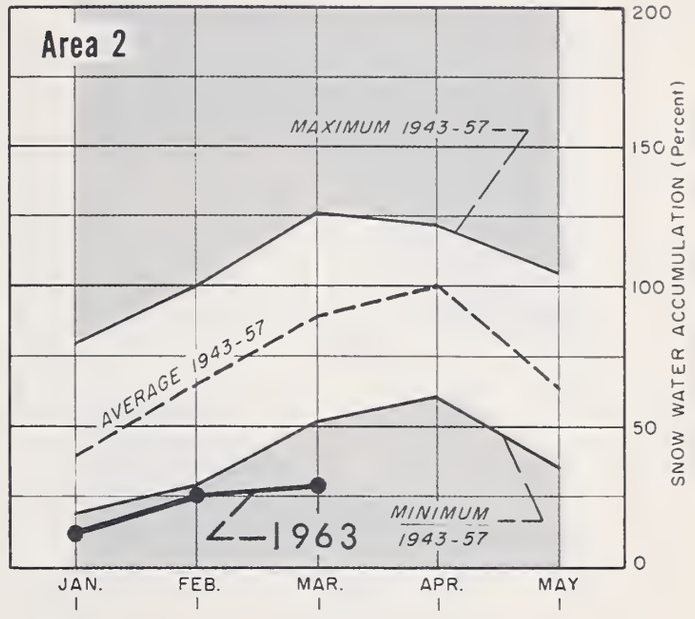


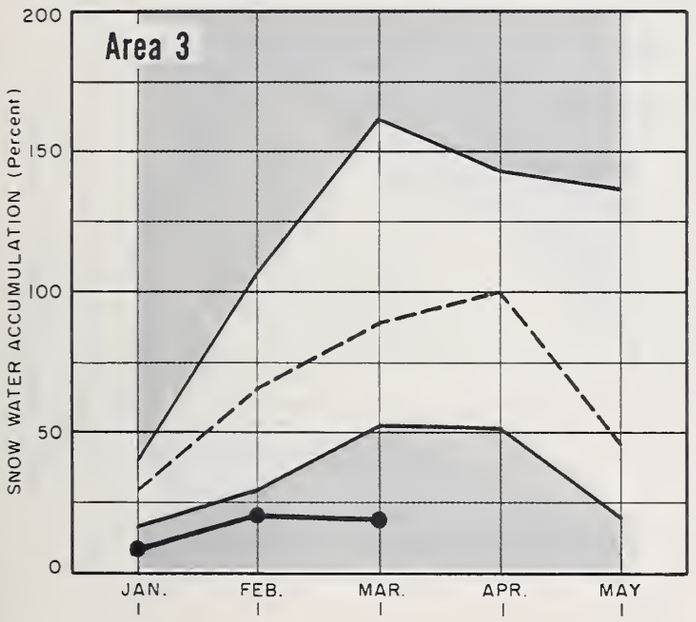
SNOW WATER ACCUMULATION in OREGON

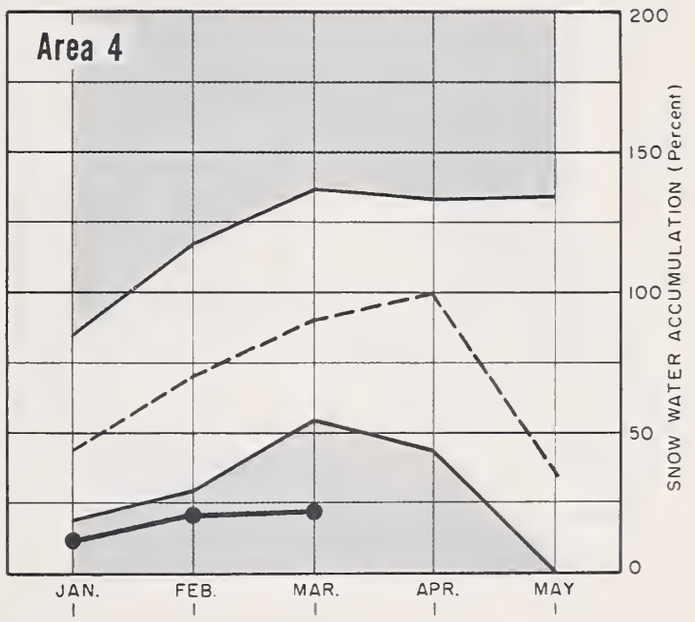
(Percent of average maximum accumulation)

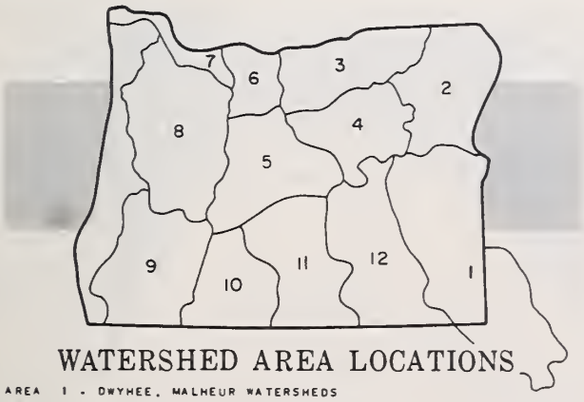
MARCH 1, 1963





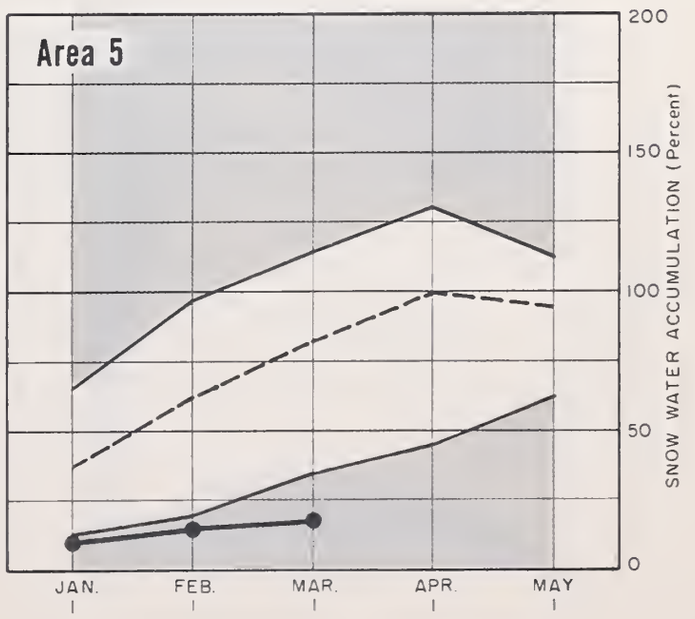






WATERSHED AREA LOCATIONS

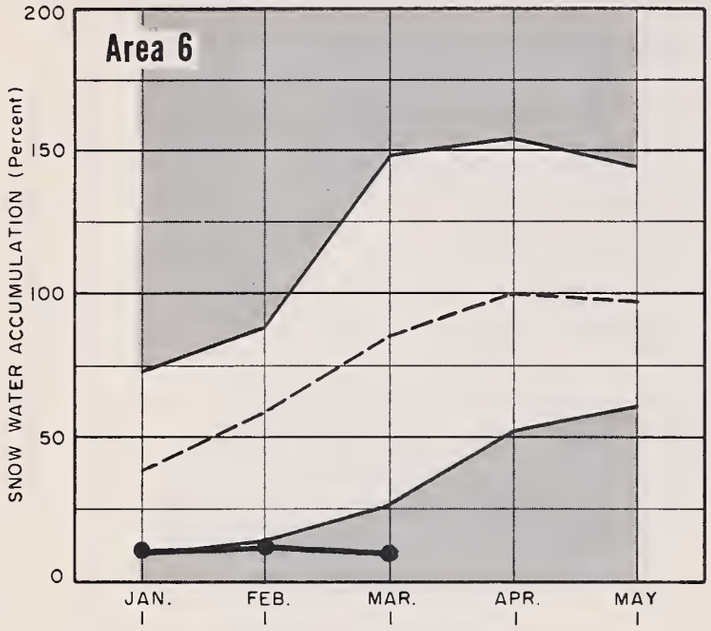
AREA 1 - DWYHEE, MALHEUR WATERSHEDS
AREA 2 - BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
AREA 4 - UPPER JOHN DAY WATERSHEDS
AREA 5 - UPPER DESCHUTES, CROOKED, WATERSHEDS
AREA 6 - HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
AREA 7 - LOWER COLUMBIA WATERSHEDS
AREA 8 - WILLAMETTE WATERSHEDS
AREA 9 - ROGUE, UMPQUA WATERSHEDS
AREA 10 - KLAMATH WATERSHEDS
AREA 11 - LAKE COUNTY, GOOSE LAKE WATERSHEDS
AREA 12 - HARNEY BASIN WATERSHEDS

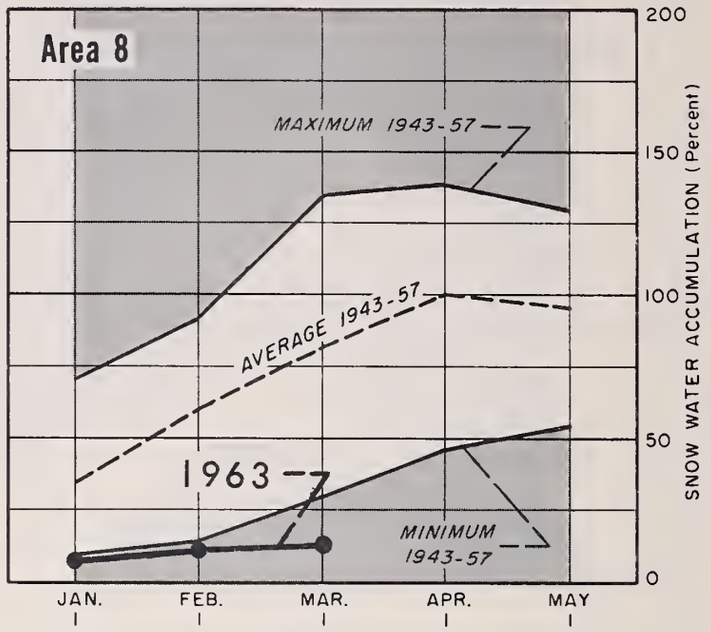


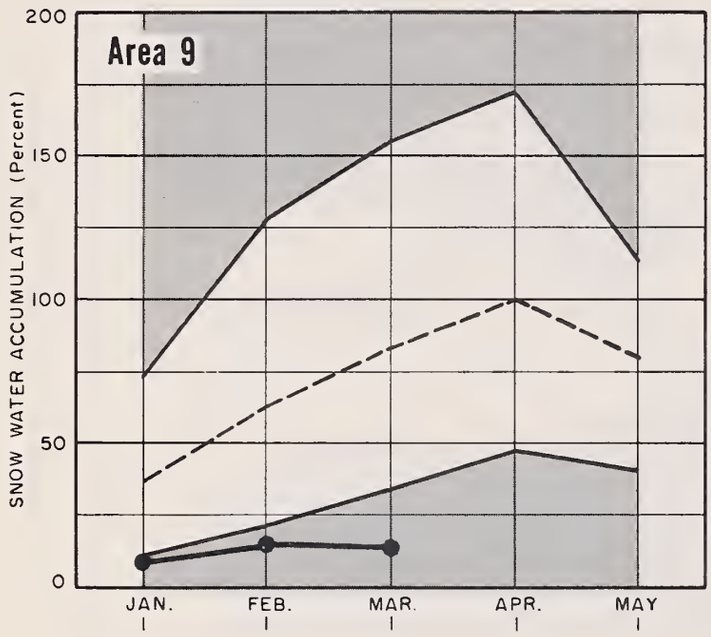
SNOW WATER ACCUMULATION in OREGON

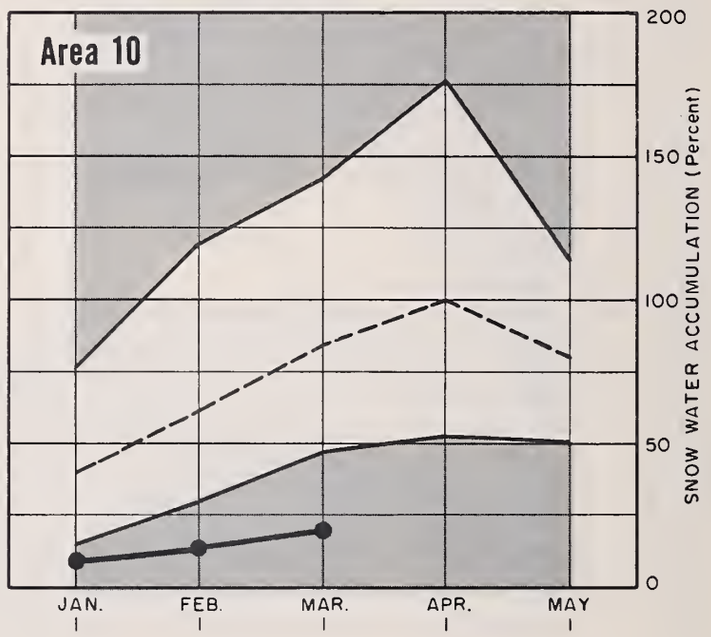
(Percent of average maximum accumulation)

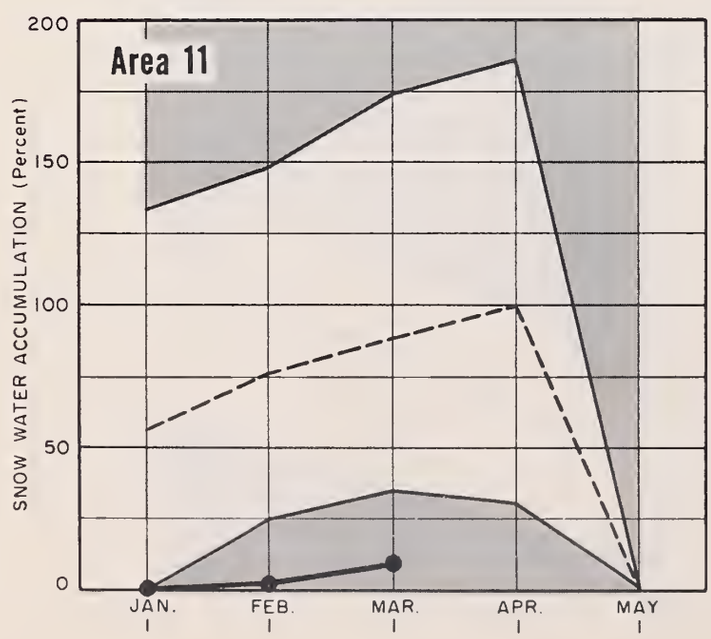
MARCH 1, 1963

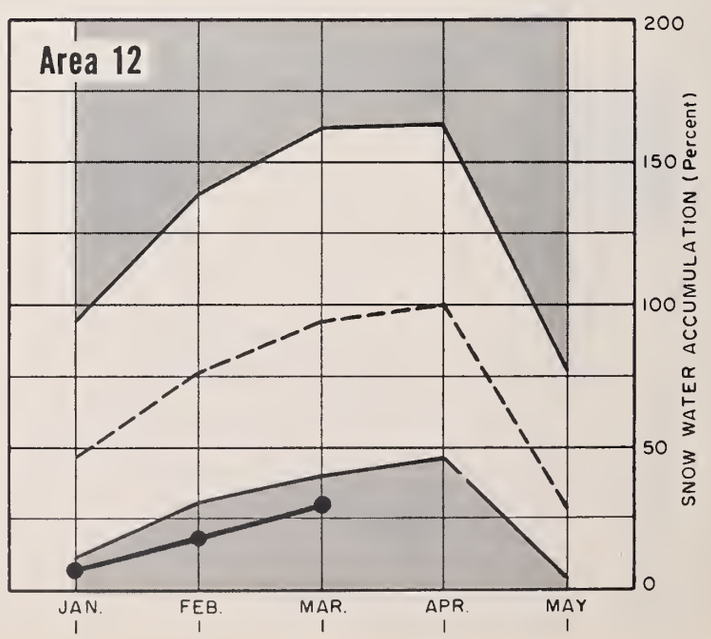




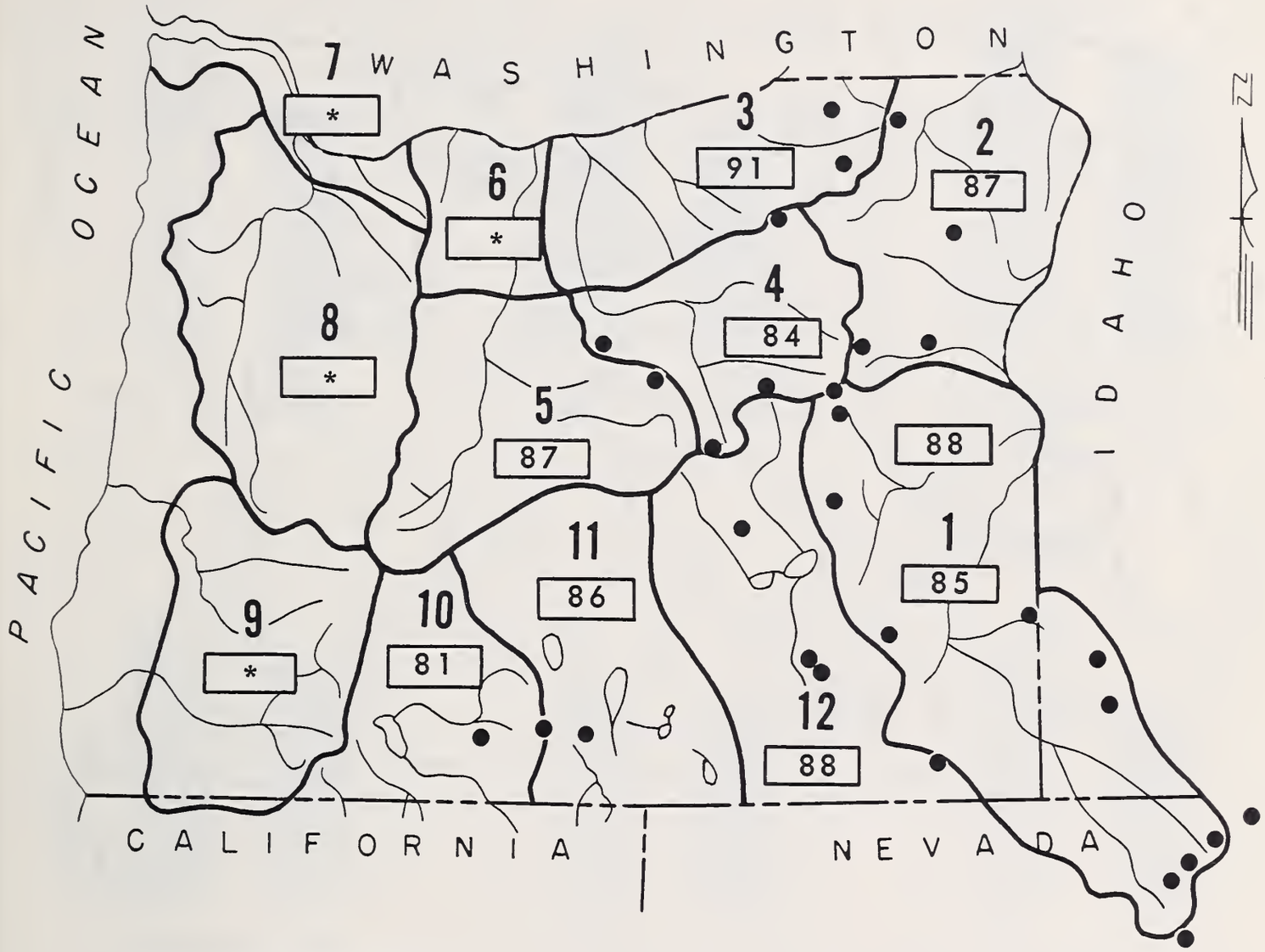








MOUNTAIN SOIL MOISTURE in OREGON
as percent of capacity
MARCH 1, 1963



● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

VALLEY PRECIPITATION in OREGON [a]

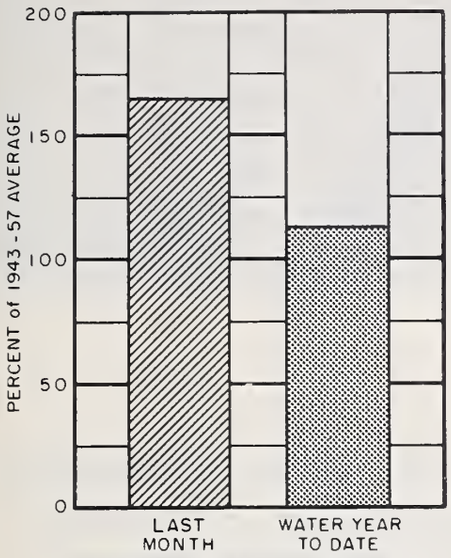
MARCH 1, 1963

PRECIPITATION as PERCENT of the 1943-57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE [b]	STATION	LAST MONTH	WATER YEAR TO DATE [b]
Baker	72	131	Lakeview	126	163
Bend	149	100	Medford Apt.	114	137
Burns	108	131	Nyssa	134	114
Enterprise	82	118	Pendleton Apt.	164	109
Eugene Apt	109	80	Portland Apt.	79	80
Heppner	187	114	Roseburg Apt.	101	78
John Day	194	139	Salem Apt.	61	74
Klamath Falls	71	101	The Dalles	134	83

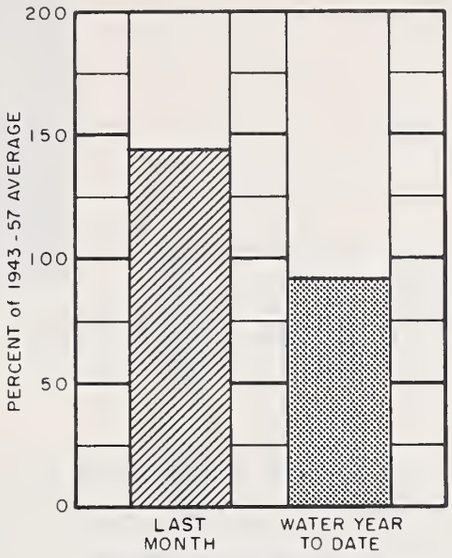
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

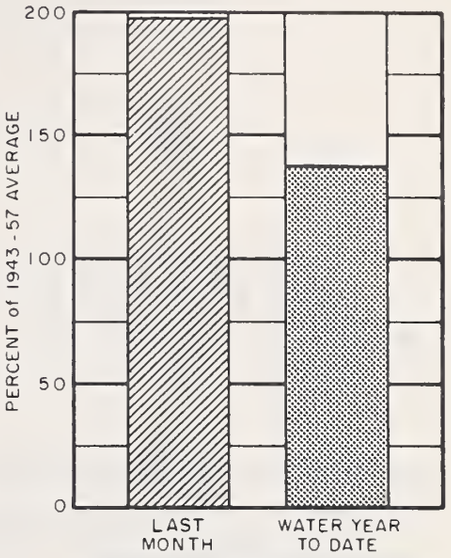
MARCH 1, 1963



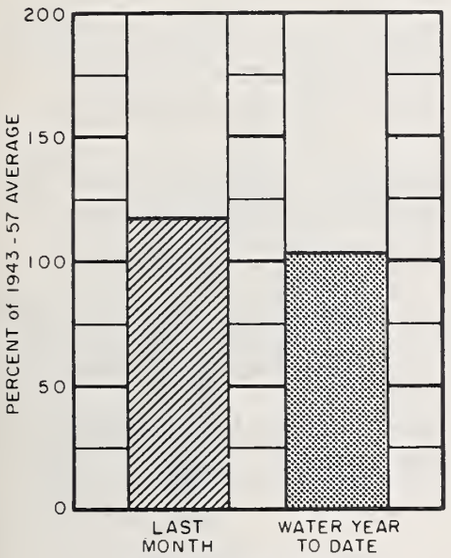
Owyhee Lake net inflow



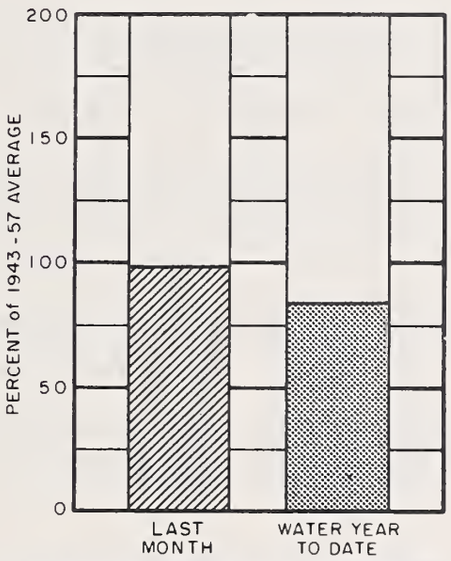
Umatilla near Umatilla



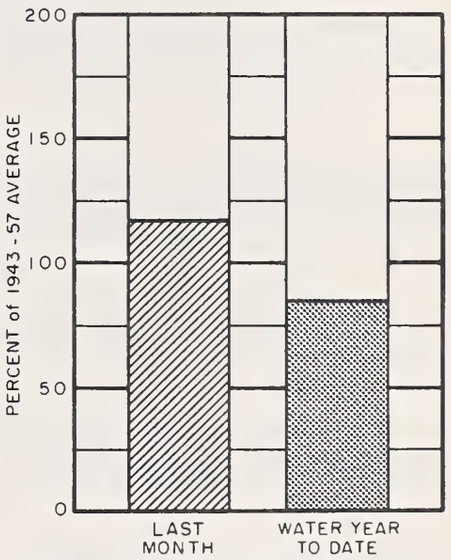
John Day at Service Creek



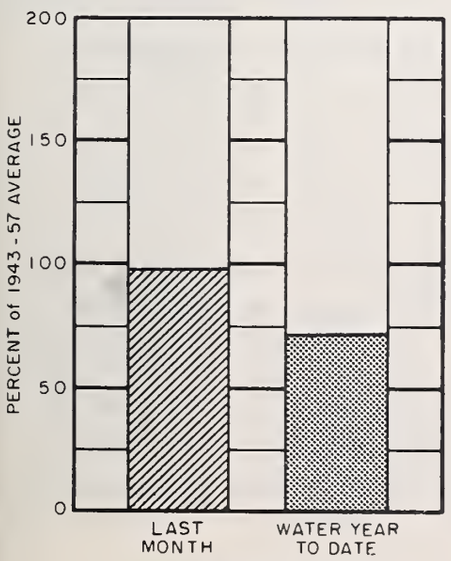
Deschutes at Moody



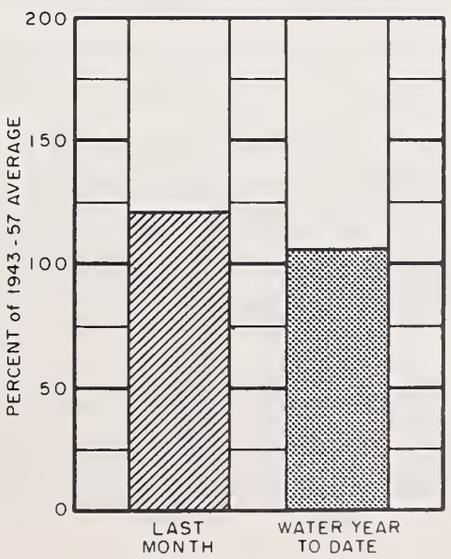
Hood and conduit near Hood River



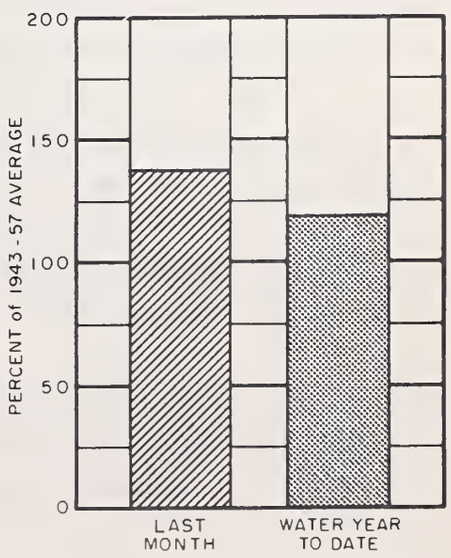
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.; and North and South Boards of Control Owyhee Project.

WATER SUPPLY OUTLOOK
OWYHEE, MALHEUR WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - The spring and summer streamflow in Malheur County in 1963 will be similar to the extremely poor flows measured in the drought year of 1961 or possibly even less because the mountain snowpack is at an all-time low. All possible measures should be taken to conserve and "stretch" water supplies for irrigation purposes.

SNOW COVER - At 43 out of 49 snow measuring stations in Malheur County, the snow is completely missing or has set new low records. The water content of the mountain snowpack now averages 18 percent of the usual March 1 figure.

SOIL MOISTURE - Watershed soils are in excellent condition for stream runoff and are primed up to 85 percent of capacity on the Owyhee and 88 percent of capacity on the Malheur. Soils are saturated in many places.

RESERVOIR STORAGE - Owyhee Reservoir contained 343,500 acre feet on March 1 compared with 168,000 a year ago at this date.

Warmsprings held 71,500 acre feet on March 1 in contrast with 27,300 a.f. one year ago. Agency Valley Reservoir had 35,600 a.f. on March 1st this year and 18,300 a.f. a year ago.

Antelope Reservoir had 10,840 a.f. on March 1 compared with 7,000 a.f. one year ago.

STREAMFLOW March-July inflow to Owyhee is forecast at 100,000 acre feet or 19 percent of average. Coupled with available stored water, this should provide about 440,000 acre feet which can be supplemented by pumping for a reasonably good water supply.

Malheur River near Drewsay is forecast at 36,000 a.f. or 33 percent average March through July. North Fork at Beulah is forecast at 23,000 a.f. April through September or 36 percent average. Remaining flow of these two streams plus total stored water in the two reservoirs should provide about 175 to 180 thousand acre feet of water. This supply will be somewhat below the usual needs for the Vale-Oregon and the Warmsprings Irrigation Districts.

Runoff of Jordan Creek and smaller streams such as Bully Creek, Cottonwood and Succor Creeks will be extremely short this irrigation season. Jordan Valley water users are favored by stored water supplies but others may have only one irrigation.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE · PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Fair	Poor
Bully Creek	Poor	Poor
Cow Creek	Poor	Poor
Jordan Creek	Fair	Poor
Jordan Valley Irrig. Dist.	Fair	Fair
McDermitt Creek	Poor	Poor
Oregon Canyon Creek	Poor	Poor
Owyhee Project	Average	Average
Succor Creek	Poor	Poor
Tenmile Creek	Poor	Poor
Vale Oregon Irrig. Dist.	Fair	Fair
Warmsprings Irrig. Dist.	Fair	Fair
Willow Creek (Reservoired)	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	35.6	18.3	33.6
Antelope	55.0	10.8	7.0	10.1
Owyhee	715.0	343.5	167.7	473.1
Warmsprings	191.0	71.5	28.8	83.0

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
2140	Malheur near Drewsey	24	April-Sept.	81	30
		36	March-July	108	33
2175	Malheur, North Fork at Beulah[d]	23	April-Sept.	64	36
1825	Owyhee Reservoir net Inflow[g]	70	April-Sept.	430	16
		100	March-July	524	19

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bear Creek (Nev.)	7800	72	16.9	2-27-63	7.6	8.7	8.6
Big Bend (Nev.)	6700	48	16.7	2-25-63	15.2	15.1[i]	15.0
Blue Mountain Springs	5900	42	16.9	2-25-63	13.6	7.9	9.3
Crane Prairie	5375	48	18.2	2-25-63	16.2[i]	13.9	14.6
Folly Farm	4450	30	12.5	12-19-62	9.0[i]	- -	- -
Jack Creek, Lower (Nev.)	6800	48	8.7	2-26-63	8.0	8.5	8.1
Jordan Valley	4250	48	19.3	12-19-62	14.9[i]	14.3[i]	- -
Mud Flat, (Ida.)	5500	48	12.8	2-28-63	10.0	8.0	7.1
Rodeo Flat (Nev.)	6800	42	11.0	2-25-63	10.6	11.0[i]	11.0
Stinking Water Summit	4800	48	21.9	1-22-63	21.0[i]	20.7[i]	21.2[i]
Taylor Canyon (Nev.)	6200	48	15.1	2-26-63	12.4	13.7	12.0
Triangle (Ida.)	5150	48	16.2	2-28-63	12.6	- -	- -

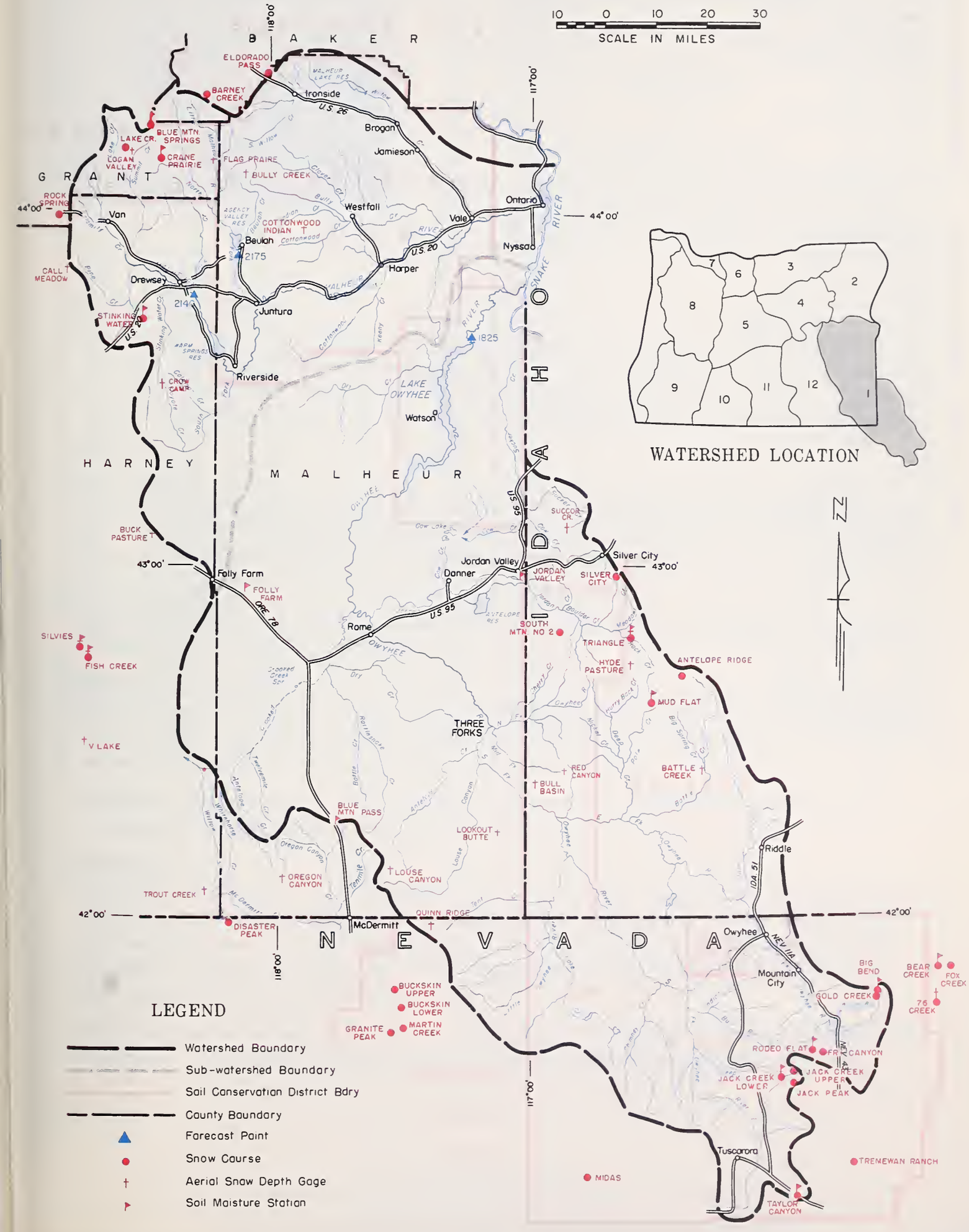
NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches) LAST YEAR	WATER CONTENT (Inches) 1943-57 AVERAGE
Antelope Ridge (Ida.)	5900	2/28	0	0.0	1.2	- -
Barney Creek	5950	2/27	2	0.8	8.3	7.7*
Battle Creek[e] (Ida.)	5700	3/4	0	0.0	1.2	- -
Bear Creek (Nev.)	7800	2/27	39	9.4	20.3	17.1*
Big Bend (Nev.)	6700	2/25	2	0.6	9.1	8.9

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted average.

OWYHEE, MALHEUR WATERSHEDS



SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	1943-57 AVERAGE
Blue Mountain Springs	5900	2/25	19	6.9	13.0	15.2
Buck Pasture [e]	5700	3/4	1	0.3	2.6	- -
Buckskin, Lower (Nev.)	6700	2/25	T	T	9.0	8.4*
Buckskin, Upper (Nev.)	7200	2/25	7	2.4	9.4	7.9*
Bull Basin [e] (Ida.)	5600	3/4	1	0.2	1.0	- -
Bully Creek [e]	5300	3/4	0	0.0	3.9	- -
Call Meadows [e]	5340	3/4	0	0.0	5.9	- -
Cottonwood-Indian [e]	4320	3/4	0	0.0	2.5	- -
Crane Prairie	5375	2/25	0	0.0	7.2	9.6
Crow Camp [e]	5500	3/4	1	0.3	- -	- -
Disaster Peak (Nev.)	6500	2/28	0	0.0	23.3	15.7
Eldorado Pass	4600	2/27	0	0.0	2.8	- -
Fish Creek	7900	2/26	45	14.3	18.1	- -
Flag Prairie [e]	4750	3/4	0	0.0	3.9	- -
Fox Creek (Nev.)	6800	2/27	7	2.0	8.7	8.4*
Fry Canyon (Nev.)	6700	2/25	0	0.0	6.1	8.2
Gold Creek (Nev.)	6600	2/25	0	0.0	4.8	6.3*
Granite Peak (Nev.)	7800	2/25	28	8.4	16.5	10.6
Hyde Pasture [e] (Ida.)	5800	3/4	0	0.0	1.8	- -
Jack Creek, Lower (Nev.)	6800	2/26	2	0.4	2.5	3.2
Jack Creek, Upper (Nev.)	7250	2/26	7	2.9	10.0	9.7*
Jack Peak (Nev.)	8420	2/26	38	10.1	25.5	- -
Lake Creek	5120	2/25	6	2.8	8.4	10.7
Logan Valley	5100	2/25	0	0.0	6.5	- -
Lookout Butte [e]	5650	3/4	1	0.2	0.6	- -
Louse Canyon [e]	6440	3/4	0	0.0	5.8	- -
Martin Creek (Nev.)	6700	2/25	T	T	12.5	8.2
Midas (Nev.)	7200	2/27	0	0.0	7.8	4.7*
Mud Flat (Ida.)	5500	2/28	0	0.0	2.4	- -
Oregon Canyon [e]	6950	3/4	3	0.9	7.0	- -
Quinn Ridge [e] (Nev.)	6300	3/4	0	0.0	1.9	- -
Red Canyon [e] (Ida.)	6500	3/4	3	0.6	3.2	- -
Rock Spring	5100	2/27	1	0.1	5.0	5.9
Rodeo Flat (Nev.)	6800	2/25	T	T	4.8	8.2
76 Creek [e] (Nev.)	7100	2/25	T	T	10.4	2.8*
Silver City (Ida.)	6400	2/28	5	1.4	13.9	14.8*
Silvies	6900	2/26	5	2.0	12.2	- -
South Mountain #2 (Ida.)	6340	2/27	7	1.6	8.2	11.4
Stinking Water	4800	2/27	0	0.0	4.0	4.0*
Succor Creek [e] (Ida.)	6100	3/4	2	0.4	4.0	- -
Taylor Canyon (Nev.)	6200	2/26	0	0.0	2.6	5.0
Tremewan Ranch (Nev.)	5700	2/25	0	0.0	T	1.9
Triangle [e] (Ida.)	5150	3/4	1	0.1	0.1	- -
Trout Creek [e]	7800	3/4	12	3.6	9.0	- -
"V" Lake [e]	6600	2/24	2	0.8	3.8	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Spring and summer streamflow in Northeast Oregon will be greatly reduced this year, due to an extremely "short" snowpack. Fortunately, the supplies of reservoired water are much above average and will provide satisfactory water supplies for the areas they serve. Other water users will find their water supplies greatly reduced this irrigation season.

SNOW COVER

Snow measurements at 27 stations in this corner of the state are all lowest of record for March 1 except for the two courses at Aneroid Lake. Present snowcover in this region has a water content only 36 percent of the March 1 average.

SOIL MOISTURE

Watershed soils are very well primed and now hold 87 percent of their total capacity. This will favor runoff into streams.

RESERVOIR STORAGE

Unity Reservoir now has 19,600 acre feet compared with 11,500 a.f. on March 1 last year. This storage is more than double the average and will probably provide adequate water for lands served from this source.

Wallowa Lake contains 24,600 acre feet compared with 13,800 a.f. a year ago. This is above the average and should be sufficient.

STREAMFLOW

Streamflow during the April-September period is forecast at 33 percent average for the Burnt River; 45 percent for the Powder River; 47 percent for the Grande Ronde at La-Grande; 62 percent for Catherine Creek; 73 percent for East Fork Wallowa River; 65 percent for Hurricane Creek; 74 percent for Lostine River; 74 percent for Bear Creek near Wallowa and 68 percent for Imnaha River.

These forecasts assume that March storms will bring an average increase in the mountain snowpack. This will be possible only with normal temperatures and precipitation.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Fair	Poor
Baker Valley	Fair	Poor
Big Creek	Fair	Poor
Clover Cr. (nr. No. Powder)	Fair	Poor
Cove	Fair	Poor
Durkee	Fair	Poor
Eagle Valley	Fair	Poor
Elgin	Fair	Poor
Enterprise-Joseph	Average	Fair
Hereford-Bridgeport	Average	Fair
Imnaha River	Fair	Fair
LaGrande-Island City	Fair	Poor
Lostine-Wallowa	Fair	Poor
No. Powder River-Wolf Cr.	Fair	Poor
Pine Valley	Fair	Poor
Powder River-Elk Creek	Fair	Poor
Summerville	Fair	Poor
Sumpter Valley	Fair	Poor
Union-Hot Lake	Fair	Poor
Unity	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	19.6	11.5	9.1
Wallowa Lake	37.5	24.6	13.8	16.1

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3305	Bear near Wallowa	55	April-Sept.	74	74
2730	Burnt near Hereford[d]	15	April-Sept.	45	33
		18	March-June	51	35
3200	Catherine near Union	45	April-Sept.	73	62
3190	Grande Ronde at LaGrande	120	March-Sept.	245	49
		95	April-Sept.	202	47
3295	Hurricane near Joseph	32	April-Sept.	49	65
2920	Imnaha at Imnaha	215	April-Sept.	314	68
3300	Lostine near Lostine	99	April-Sept.	133	74
2755	Powder near Baker	30	April-Sept.	66	45
		29	April-July	65	45
3250	Wallowa, East Fork near Joseph[d]	8.8	April-Sept.	12.1	73
		7.1	April-July	9.7	73

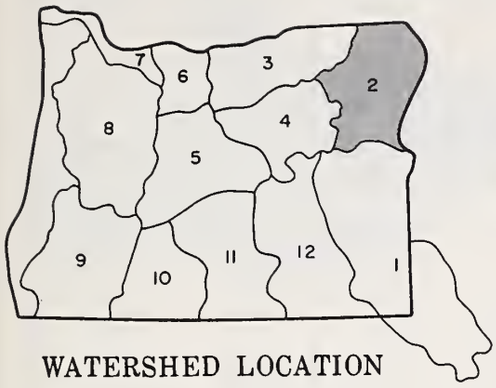
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Summit	5100	36	16.8	2-28-63	12.8	7.3	9.7
Emigrant Springs	2925	48	22.3	2-25-63	20.5	18.2[i]	21.0
Tollgate	5070	48	22.2	2-27-63	20.3	20.6	20.9

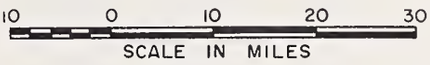
NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted averages.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



WATERSHED LOCATION



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station
- Aerial Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Aneroid Lake No. 1	7480	2/23	60	21.0	32.8	33.4*
Aneroid Lake No. 2	7000	2/24	42	14.7	25.4	26.2*
Anthony Lake	7125	2/24	38	11.3	22.6	25.2*
Bald Mountain[e]	6700	2/26	27	9.4	25.7	- -
Barney Creek	5950	2/27	2	0.8	8.3	7.7*
Beaver Reservoir	5340	2/26	12	4.2	10.1	10.6
Big Sheep[e]	6200	2/25	17	6.0	- -	- -
Blue Mountain Summit	5098	2/28	5	1.8	7.8	9.0
Bourne	5800	2/25	14	5.5	14.2	16.5*
County Line	4800	2/28	0	0.0	5.3	7.6*
Dooley Mountain	5430	2/27	1	0.5	8.5	8.8
Eilertson Meadows	5400	2/21	0	0.0	9.4	11.1*
Eldorado Pass	4600	2/27	0	0.0	2.8	- -
Gold Center	5340	2/25	9	4.1	12.3	12.8*
Goodrich Lake	6775	2/18	48	16.4	- -	32.1*
Little Alps	6200	2/24	11	3.0	12.0	- -
Lucky Strike	5050	2/25	18	5.4	10.3	12.3
Meacham	4300	2/25	0	0.0	6.2	9.9
Mirror Lake[e]	8200	2/25	128	44.8	- -	- -
Moss Spring	5850	2/26	15	4.7	20.8	22.4
Schneider Meadows	5400	2/26	42	15.1	28.8	29.5*
Schoolmarm	4775	2/28	0	0.0	3.9	6.4*
Standley[e]	7400	2/25	33	11.6	26.5	- -
Taylor Green	5740	3/1	14	3.8	13.8	- -
Tipton	5100	2/28	6	2.5	8.3	11.0
Tollgate	5070	2/27	13	5.9	18.8	26.2
TV Ridge[e]	5670	2/25	0	0.0	- -	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Spring and summer flows of streams in the Umatilla-Walla Walla area will be greatly below average this irrigation season due to the record-low snowpack. Stored water supplies will be a real blessing this season, but water users depending on natural flow of streams will find mid-summer and late season water very scarce.

SNOW COVER

Water content of the mountain snowpack is only 17 percent of the March 1 average as measured at 8 snow stations. Record lows were recorded for all 8 stations.

SOIL MOISTURE

Soil moisture in the upper watersheds is very high. It is now 91 percent of the total capacity of the four foot soil profile.

RESERVOIR STORAGE

Stored water now held in Cold Springs Reservoir is 43,900 acre feet compared with 40,400 a.f. one year ago this date. This reservoir will fill, but drawdown may have to begin earlier than usual.

McKay Reservoir now holds 31,200 acre feet compared with 18,800 a.f. one year ago. Storage this year will probably peak under 50,000 a.f. with average weather conditions.

STREAMFLOW

Streamflows much below average are forecast in this region. The South Fork of the Walla Walla is forecast at 60 percent of the average for April through September and mean discharge is expected to drop to 100 second-feet by about mid July.

Flow of the Umatilla at Pendleton is forecast at 59 percent average and at Gibbon 60 percent average April through September.

For the same 6 months, McKay Creek is forecast to flow 48 percent average or 15,000 acre feet.

Butter Creek, near Pine City, is forecast at 6,000 acre feet or 43 percent average for the March-July period. Other small streams will have similarly "short" flows.

Report prepared by
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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek	Fair	Poor
Butter Creek	Fair	Poor
Dry Creek	Fair	Poor
Duggér Creek	Fair	Poor
Johnson Creek	Fair	Poor
McKay Creek	Fair	Poor
Mill Creek	Fair	Poor
Mud Creek	Fair	Poor
Pine Creek	Fair	Poor
Rhea Creek	Fair	Poor
Rock Creek	Fair	Poor
Umatilla R. (Cold Springs Res.)	Fair	Fair
Umatilla R., Main	Fair	Poor
Umatilla River (McKay Res.)	Fair	Fair
Walla Walla River, Little	Fair	Poor
Walla Walla River, Main	Fair	Poor
Walla Walla River, N. Fork	Fair	Poor
Walla Walla River, S. Fork	Fair	Poor
Willow Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	43.9	40.4	38.6
McKay	73.8	31.2	18.8	44.1

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0320	Butter Creek near Pine City	6.0	March-July	14.0	43
0225	McKay near Pilot Rock	23	March-July	48	48
		15	April-Sept.	31	48
0200	Umatilla near Gibbon	58	April-Sept.	96	60
0210	Umatilla at Pendleton	110	April-Sept.	187	59
		108	April-July	182	59
0100	Walla Walla, South Fork near Milton	46	April-Sept.	76	60
		38	April-July	62	62

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	18.7	2-27-63	15.7	16.6	13.8
Battle Mountain Summit	4340	48	13.8	2-25-63	13.5	11.6	12.0
Emigrant Springs	3925	48	22.3	2-25-63	20.5	18.2[g]	21.0
Tollgate	5070	48	22.2	2-27-63	20.3	20.6	20.9

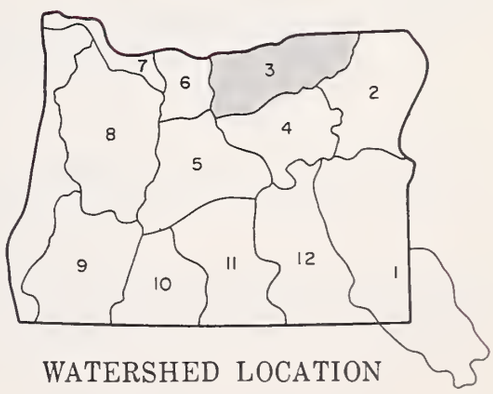
NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data. (h) Partly estimated. (*) 1943-57 adjusted average. (**) Average for 5 or more years in base period.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Soil Moisture Station



WATERSHED LOCATION

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	2/25	0	0.0	9.0	11.1*
Battle Mountain Summit	4340	2/25	0	0.0	1.9	- -
Blue Mountain Camp	4300	2/27	1	0.1	- -	- -
Emigrant Springs	3925	2/25	0	0.0	1.4	7.3
Lucky Strike	5050	2/25	18	5.4	10.3	12.3
Meacham	4300	2/25	0	0.0	6.2	9.9
Tollgate	5070	2/27	13	5.9	18.8	26.2
Weston Mountain	2700	2/27	0	0.0	- -	- - -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER JOHN DAY WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low streamflow will occur this spring and summer in the John Day basin due to a record-low snowpack in the mountains. Most irrigators will find their water supplies greatly reduced over the usual amounts. All possible measures should be taken to conserve and "stretch" water supplies for irrigation use.

SNOW COVER

Water content of the mountain snowpack is only 27 percent of the average for March 1. Surveys indicate no snow at 9 out of 20 measured snow stations.

Olive Lake snow course at 6,000 feet elevation normally has about 5 1/2 feet of snow with a water content of 18.6 inches on March 1st. This year, there are only 19 inches of snow with a water content of 6.9 inches according to a recent survey by employees of the California-Pacific Utilities Company, which cooperates at this station.

SOIL MOISTURE

Watershed soil moisture is very favorable to runoff with re-priming of the soils now up to 84 percent of capacity compared with 68 percent one year ago.

STREAMFLOW

Flow of the John Day River at Service Creek* has been 198 percent average during February and has been 136 percent average since October 1st.

Forecasts for flow of the John Day at Prairie City is 46 percent average for the April through September period. The Middle Fork should flow about 46 percent average for the same period.

These flows will provide water supplies slightly poorer than the "short" amounts available in 1961. These forecasts will be lowered further if March storms do not increase the mountain snowpack in normal amounts.

* Preliminary data furnished by U. S. Geological Survey, Portland, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek	Fair	Poor
Beech Creek-Fox-Long Crs.	Fair	Poor
Bridge-Mountain Creeks	Fair	Poor
Camas Creek	Fair	Poor
Cherry Creek	Fair	Poor
Indian-Pine Creeks	Fair	Poor
John Day River, Main Fork	Fair	Poor
John Day River, Mid. Fork	Fair	Poor
John Day River, N. Fork	Fair	Poor
John Day River, So. Fork	Fair	Poor
Monument-Kimberly	Fair	Poor
Strawberry Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
0385	John Day at Prairie City	25	April-Sept.	54	46
		30	March-July	59	51
0440	John Day, Middle Fork at Ritter	62	April-Sept.	135	46
		83	March-July	158	54
0375	Strawberry near Prairie City	5.0	April-Sept.	9.1	55

SOIL MOISTURE

STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Battle Mountain Summit	4340	48	16.8	2/25/63	13.5	11.6	12.0
Blue Mountain Springs	5900	42	16.9	2/25/63	13.6	7.9	9.3
Blue Mountain Summit	5100	36	16.8	2/28/63	12.8	7.3	9.7
Derr	5670	24		[c]			
Marks Creek	4540	36	14.1	2/26/63	12.0	12.0	11.4
Snow Mountain	6300	48	16.7	2/25/63	14.8	14.8	- -
Starr Ridge	5150	36	10.6	2/25/63	10.4	8.7	9.5

NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data. (i) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS

LEGEND

- Watershed Boundory
- Sub-watershed Boundory
- Soil Conservation District Bdry
- County Boundory
- Forecast Point
- Snow Course
- Soil Moisture Station
- Aerial Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Anthony Lake	7125	2/24	38	11.3	22.6	25.2*
Arbuckle Mountain	5400	2/25	0	0.0	9.0	11.1*
Battle Mountain Summit	4340	2/25	0	0.0	1.9	- -
Beech Creek Summit	4800	2/26	0	0.0	6.2	5.8
Blue Mountain Spring	5900	2/25	19	6.9	13.0	15.2
Blue Mountain Summit	5098	2/28	5	1.8	7.8	9.0
Derr	5670	2/26	2	0.5	9.8	- -
East Fork Canyon *e*	5700	2/25	T	T	10.6	- -
Gold Center	5340	2/25	9	4.1	12.3	12.8*
Indian Creek Butte *e*	6550	2/25	30	10.8	19.3	- -
Izee Summit	5293	2/25	3	1.1	8.1	8.1
Lucky Strike	5050	2/25	18	5.4	10.3	12.3
Marks Creek	4540	2/26	0	0.0	5.2	4.3
Ochoco Meadows	5200	2/27	0	0.0	12.1	10.3
Olive Lake	6000	2/26	19	6.9	16.7	18.6
Schoolmarm	4775	2/28	0	0.0	3.9	6.4*
Snow Mountain	6300	2/25	15	5.5	12.8	13.0*
Starr Ridge	5150	2/25	0	0.0	5.0	6.0
Tipton	5100	2/28	6	2.5	8.3	11.0*
Williams Ranch	4500	2/25	0	0.0	T	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
UPPER DESCHUTES, CROOKED WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low streamflow in the spring and summer months in the Deschutes, Crooked watersheds is forecast due to a record-low snowpack in the mountains. Reservoired water supplies will "save the day" in many places, but irrigators depending on natural flow will have little or no water after mid-summer. Many acres will receive only one irrigation this year.

SNOW COVER

Water content of the mountain snowpack is only 16 percent average on the Crooked River watershed and 23 percent average on the Deschutes.

Surveys on 24 snow courses indicate an all-time low record of snow as of March 1.

SOIL MOISTURE

Soils in the upper watersheds have been adequately re-primed with moisture and are now 87 percent of total capacity.

RESERVOIR STORAGE

Ochoco and Prineville reservoirs together have 137,000 acre feet in storage compared with 106,000 a.f. at this date last year. This is an adequate supply for lands served from these sources.

Wickiup has 179,400 acre feet compared with 167,000 a.f. a year ago. Crane Prairie and Crescent Lake reservoirs have 44,400 a.f. and 58,000 a.f. respectively which is greater than last year and better than the usual storage.

STREAMFLOW

Forecast for flow at Benham Falls on the main Deschutes is 60 percent for the April-September period. The Little Deschutes is forecast at 37 percent for the same period.

Tumalo Creek and Squaw Creek are forecast at 56 and 64 percent respectively for the six months, April-September. Crooked River and Ochoco Creek are forecast at 25 and 19 percent for the same period.

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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Fair
Bear Creek	Fair	Poor
Beaver Creek	Fair	Poor
Camp Creek	Fair	Poor
Central Ore. Irrig. Dist.	Average	Fair
Crooked River (abv. Res.)	Fair	Poor
Deschutes River	Fair	Poor
Hay-Trout Creeks	Fair	Poor
Lone Pine Irrig. Dist.	Average	Fair
Mill Creek	Fair	Poor
North Unit Irrig. Dist.	Average	Fair
Ochoco Creek (above Res.)	Fair	Poor
Sisters Irrigation Dist.	Fair	Poor
Snow Creek Irrig. Dist.	Fair	Fair
Squaw Creek Irrig. Dist.	Fair	Poor
Swalley Ditch	Average	Average
Tumalo Project	Average	Fair
Walker Basin Irrig. Dist.	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	44.4	37.9	44.1
Crescent Lake	117.2	58.0	41.4	47.3
Ochoco	47.5	37.1	13.8	28.5
Prineville	153.0	100.1	92.3	- -
Wickiup	182.0	179.4	166.9	133.3

Note: The U. S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	70	April-Sept.	143	49
0600	Crescent at Crescent Lake [d]	13	March-July	28	46
		11	April-Sept.	31	35
0795	Crooked near Post	80	March-July	179	45
		32	April-Sept.	129	25
0645	Deschutes at Benham Falls [d]	360	April-Sept.	602	60
		250	April-July	404	62
0500	Deschutes below Snow Creek	36	April-Sept.	74	49
0630	Deschutes, Little near Lapine [d]	55	March-July	115	48
		42	April-Sept.	113	37
0848	Ochoco Reservoir net Inflow	20	March-July	45	44
		6.0	April-Sept.	32	19
0555	Odell near Crescent	17	April-Sept.	34	50
0750	Squaw near Sisters	35	April-Sept.	55	64
0730	Tumalo near Bend [d]	31	April-Sept.	55	56

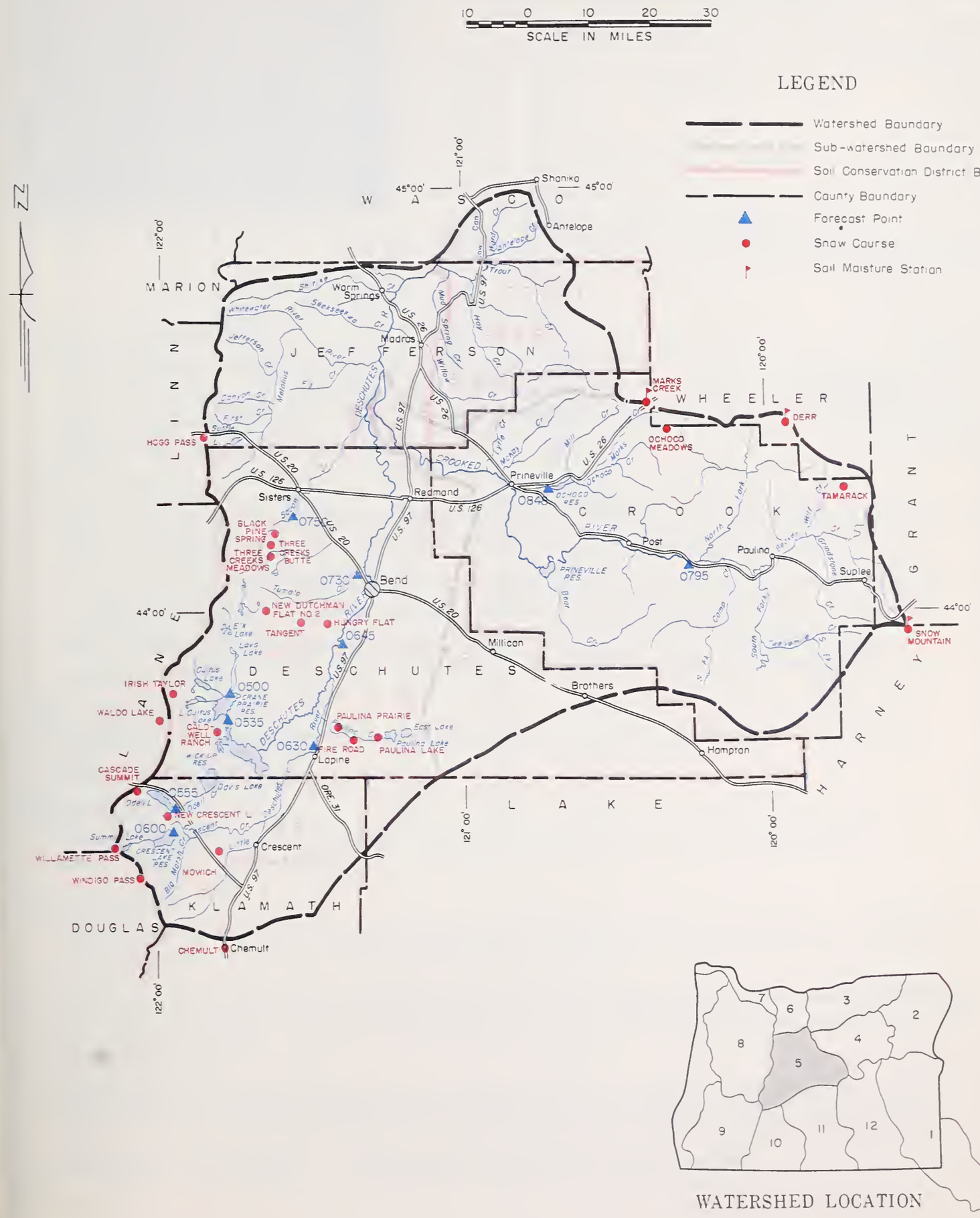
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Marks Creek	4540	36	14.1	2/26/63	12.0	12.0	11.4
Snow Mountain	6300	48	16.7	2/25/63	14.8	14.8	- -

NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (h) Nearest current data.

UPPER DESCHUTES, CROOKED WATERSHEDS



WATERSHED LOCATION

Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	3/1	0	0.0	3.0	5.8*
Caldwell Ranch	4400	2/19	0	0.0	10.6	- -
Cascade Summit	4880	2/27	12	4.9	23.8	30.6*
Chemult	4760	2/25	0	0.0	8.3	12.2
Derr	5670	2/26	2	0.5	9.8	- -
Fire Road	5050	2/18	0	0.0	8.8	- -
Hogg Pass	4755	2/25	18	7.5	33.4	42.0
Hungry Flat	4400	2/25	0	0.0	5.6	8.1*
Irish-Taylor	5500	2/19	29	11.7	32.9	- -
Marks Creek	4540	2/26	0	0.0	5.2	4.3
Mowich	4700	2/22	0	0.0	2.0	- -
New Crescent Lake	4800	2/22	0	0.0	11.8	16.8*
New Dutchman Flat No. 2	6400	2/25	47	20.2	44.3	48.3*
Ochoco Meadows	5200	2/27	0	0.0	12.1	10.3
Paulina Lake	6330	2/18	27	8.5	19.3	- -
Paulina Prairie	4285	2/18	0	0.0	0.0	- -
Snow Mountain	6300	2/25	15	5.5	12.8	13.0*
Tamarack	4800	2/26	0	0.0	5.8	6.2*
Tangent	5400	2/25	11	5.0	19.9	22.2*
Three Creeks Butte	5200	3/1	0	0.0	11.3	- -
Three Creeks Meadows	5600	3/1	T	T	21.4	20.0*
Waldo Lake	5500	2/19	15	5.5	24.2	- -
Willamette Pass	5600	2/22	35	13.2	33.4	38.3*
Windigo Pass	5800	2/22	39	15.4	37.7	40.0*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low streamflow will occur this year in the Hood River-Wasco area during the spring and summer period due to a record-low snowpack in the mountains. Most irrigators will find their water supplies greatly reduced. Some will have water only in the early spring season.

SNOW COVER

Water content of the mountain snowcover is only 9 percent of the average for March 1st. There is measurable snow on only three of the ten snow stations surveyed this month.

Tilly Jane snow course at 6,000 feet elevation on the east side of Mt. Hood normally has about 10 feet of snow with a water content of 40 inches on March 1st. This year, there are only 18 inches of snow with a water content of 6.7 inches according to a recent survey by the Hood River Crag Rats. This well illustrates the shortage of snow.

SOIL MOISTURE

Moisture in the watershed soils is at a high point and will greatly favor runoff from both snowmelt and rain.

RESERVOIR STORAGE

Storage in Clear Lake is reported to be 4,400 acre feet. A very limited amount of inflow remains to be caught.

STREAMFLOW

The flow of Hood River* during February was 99 percent of average and since October 1 has been 85 percent of the 15 year (1943-57) average.

Forecasts for streamflow on Hood River for the April-September period are 63 percent of the 15 year average. Flow of White River for the same 6 month period is forecast at 59 percent average.

These flows will be less than those received in 1961 and highly similar to the flows of 1947. All flows will be greater than the 1941 minimum which was the all-time low.

* Preliminary data from U. S. Geological Survey, Portland, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch	Poor	Poor
Badger Creek	Poor	Poor
Dee Irrigation District	Fair	Poor
East Fork Irrig. Dist.	Fair	Poor
Farmers Irrig. Dist.	Fair	Poor
Hood River Irrig. Dist.	Fair	Poor
Juniper Flat	Fair	Poor
Middle Fork Irrig. Dist.	Fair	Poor
Mile Creeks	Poor	Poor
Mill Creek	Poor	Poor
Mount Hood Irrig. Dist.	Fair	Poor
Rock-Gate-Threemile Creeks	Poor	Poor
Tygh Creek	Poor	Poor
White River	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	- -	4.4	4.3	- -

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
1210	Hood near Hood River [d]	230	April-Sept.	365	63
		200	April-July	311	64
1185	Hood, West Fork near Dee	110	April-Sept.	174	63
		95	April-July	151	63
1015	White below Tygh Valley	105	April-Sept.	178	59
		95	April-July	161	59

SNOW

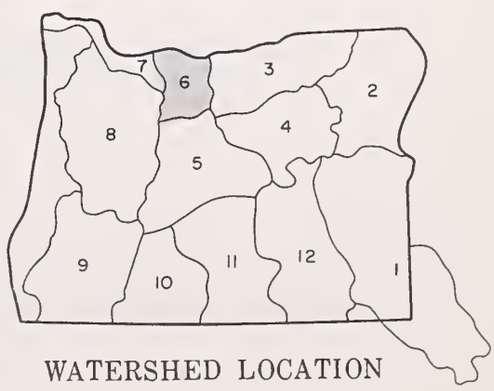
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Brooks Meadows	4300	2/21	0	0.0	5.6	- -
Clear Creek Dam	3000	*f*				
Clear Lake	3500	2/26	0	0.0	1.9	14.0*
Clear Lake (Experimental)	3500	2/26	0	0.0	7.0	- -
Cooper Spur	3490	*c*				
Greenpoint Reservoir	3400	2/21	T	T	7.6	16.7*
Knebal Springs	3850	2/21	0	0.0	4.6	- -
Lambert Point [e]	7000	*f*				
Parkdale	1770	*c*				
Phlox Point	5600	2/26	25	10.5	46.1	60.3
Pinnacle Ridge	3495	*f*				
Red Hill	4400	2/26	1	0.7	21.0	44.2*
Still Creek	3700	2/26	0	0.0	11.9	25.5
Switchback	3255	*f*				
Tilly Jane	6000	2/16	18	6.7	32.0	40.3*
Ulrich Ranch Junction	3350	2/21	0	0.0	2.8	- -
Upper Valley	2530	*c*				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course



WATERSHED LOCATION

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
LOWER COLUMBIA WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK - Below average flow of the Columbia River continues in prospect for the 1963 snowmelt season. Climatic conditions during the fall months were such that much of the precipitation came as rainfall with little snow accumulation at mountain elevations. This trend continued through the winter months along the western edge of the basin in the Oregon and Washington Cascades. Flow for the season to date has been above average on all tributary streams with some record high flows in western Idaho.

SNOW COVER - Snowpack in mountain areas remains deficient over all of the basin on March 1, following a pattern established early in the season. Near average snowpack exists only on the Big Bend area of the main Columbia River in British Columbia. Some improvement has been noted on the Kootenai and Flathead rivers during February, but snowpack is still only 70 to 80 percent of average.

A minimum of record snowpack exists in the Cascades of Washington and Oregon with general decreases in water content from a month ago.

SOIL MOISTURE - Because of unusual snowmelt through the winter season, soil moisture tends to be better than average at mountain elevations throughout the basin.

WATER SUPPLY OUTLOOK - With the deficiency of snowpack on this date, it cannot be reasonably expected that the flow of the Columbia can reach average levels during the snowmelt season. At the present time, the forecast for summer flow is among the lowest 25 percent of the years of record and may fall in the lower 10 percent.

The winter flows have been above average. The listing by months of the percent of average discharge for the Columbia at The Dalles* follows:

Month	Percent of Average Discharge (1943-57)
October	111 Adjusted for storage
November	116 " " "
December	124 " " "
January	93 " " "
February	145 " " "

* From preliminary data furnished by U. S. Geological Survey, Portland, Oregon.

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STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
1057	Columbia at The Dalles	78,700 51,500	April-Sept. April-June	106,100 72,000	74 72

HISTORICAL DATA (Columbia River at The Dalles)

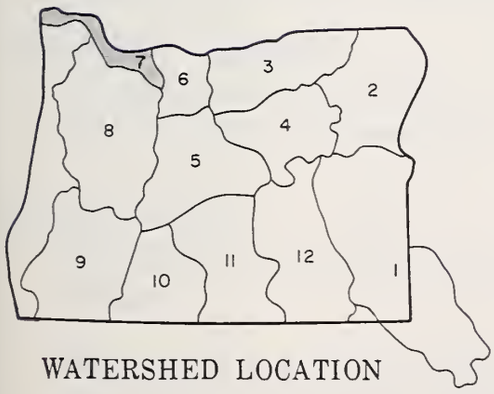
YEAR	STREAMFLOW[c] (1,000 A.F.) APR. — SEPT.	APR. — JUNE	MAY — JUNE	PEAK[e] (1,000 c.f.s.)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)[f]

VANCOUVER[g] GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s.)	DRAINAGE DISTRICT PUMPHOUSE SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES 118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer. (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- (50) River Miles
- Snow Course

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
WILLAMETTE WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Spring and summer streamflow is expected to be much below average on Willamette Valley streams due to a record-low snowcover on the watershed. Many irrigators on smaller streams are expected to have water shortages by mid-summer unless rains occur in sufficient amounts to offset the short supply of snow water in the mountains. Only lands served from reservoirs can expect an average water supply.

SNOW COVER

Water content of the mountain snowpack is only 10 percent of average for March 1 and only 16 percent of last year at this time. Snow surveyors reported no snow at all on 28 out of 35 snow courses.

Higher elevation snow courses with long records, set new lows of record. Phlox Point on Mt. Hood had the lowest March 1 reading in 25 years of measurement.

SOIL MOISTURE

Watershed soils have been well reprimed for runoff.

RESERVOIR STORAGE

Six multi-purpose reservoirs in the Willamette Basin have started filling operations according to a prearranged plan by the Corps of Army Engineers.

STREAMFLOW

Streamflow in the Willamette Basin is expected to be lower than in any of the last 20 seasons.

Forecasts of streamflow range from 53 percent on the Clackamas and Santiam to 61 percent on the Row for the April through September period. The Willamette at Salem is expected to flow 3,272,000 acre feet or 60 percent of the 1943-57 average period for April through September.

Many of the smaller streams heading at low elevations are expected to drop off earlier in the season than usual and produce a poor water supply after mid-summer.

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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya	Fair	Poor
Clackamas	Fair	Fair
McKenzie	Fair	Fair
Molalla	Fair	Poor
Santiam, North	Fair	Fair
Santiam, South	Fair	Fair
Willamette, Coast Fork	Fair	Fair
Willamette, Middle Fork	Fair	Fair

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	10.0	7.7	9.7
Detroit	299.9*	164.0	74.1	79.3
Dorena	70.5*	24.1	15.1	23.0
Fern Ridge	94.2*	32.4	31.7	35.1
Hills Creek	249.0*	105.8	61.1	- -
Lookout Point	337.2*	178.9	17.6	- -

*Multiple purpose reservoir--space reserved primarily for flood runoff.

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
2080	Clackamas at Big Bottom	98	April-Sept.	184	53
		76	April-July	150	51
2100	Clackamas at Estacada	492	April-Sept.	879	56
		412	April-July	763	54
2095	Clackamas above Three Lynx	370	April-Sept.	674	55
		300	April-July	578	52
1590	McKenzie at McKenzie Bridge	360	April-Sept.	640	56
		260	April-July	488	53
1625	McKenzie near Vida	735	April-Sept.	1362	54
		570	April-July	1120	51
2090	Oak Grove Fork above Power Intake	115	April-Sept.	198	58
		89	April-July	156	57
1545	Row near Dorena	69	April-Sept.	114	61
		65	April-July	109	60
1830	Santiam, North at Mehama[d]	515	April-Sept.	968	53
		450	April-July	866	52
1875	Santiam, South at Waterloo	355	April-Sept.	652	54
		320	April-July	616	52
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	500	April-Sept.	909	55
		440	April-July	804	55
1910	Willamette at Salem[d]	3272	April-Sept.	5461	60
		2838	April-July	4942	57

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	3/1	0	0.0	- -	8.9*
Cascade Summit	4880	2/27	12	4.9	23.8	30.6*
Champion	4500	2/28	0	0.0	17.8	24.7
Clackamas Lake	3400	2/21	0	0.0	7.3	14.4*
Clear Lake	3500	2/26	0	0.0	1.9	14.0*
Clear Lake (Experimental)	3500	2/26	0	0.0	7.0	- -
Dead Horse Grade	3800	2/27	0	0.0	12.6	21.7*
Detroit Town	1610	2/25	0	0.0	0.0	1.8*
Detroit Dam	1580	2/25	0	0.0	T	0.8*
Golden Curry Creek	3136	2/28	0	0.0	0.7	6.6*
Hogg Pass	4755	2/25	18	7.5	33.4	42.0
Lake Harriet	2045	3/1	0	0.0	2.5	3.8*
Layng Creek	1200	2/28	0	0.0	0.0	0.0*
Lost Creek Ranch	1956	2/27	0	0.0	0.0	- -
Lund Park	1740	2/28	0	0.0	T	1.3*
Marion Forks	2730	2/25	0	0.0	8.3	15.9
Marys Peak	3620	2/28	0	0.0	- -	- -
McCredie Springs	2120	2/27	0	0.0	T	0.9*
McKenzie	4800	2/27	19	8.0	35.6	43.3*
McKenzie Bridge	1372	2/27	0	0.0	0.0	1.6*
Meridian Dam	750	2/27	0	0.0	0.0	0.0*
Mill City	826	2/25	0	0.0	0.0	0.0*
Oakridge	1310	2/27	0	0.0	T	T *
Peavine Ridge	3500	*f*				
Phlox Point	5600	2/26	25	10.5	46.1	60.3
Railroad Overpass	2750	2/27	0	0.0	T	4.6*
Salt Creek Falls	4000	2/27	0	0.0	13.2	17.0*
Santiam Junction	3990	2/25	0	0.0	16.4	25.3
Still Creek	3700	2/26	0	0.0	11.9	25.5
Timothy Lake	3295	3/1	1	0.2	11.9	- -
Vida	800	2/27	0	0.0	0.0	0.0*
Waldo Lake	5500	2/19	15	5.5	24.2	- -
Weaver Creek	2440	2/28	0	0.0	0.6	2.7*
White Branch Slide	2800	2/27	0	0.0	2.2	8.8*
Whitewater Bridge	2175	2/25	0	0.0	0.4	7.9*
Willamette Pass	5600	2/22	35	13.2	33.4	38.3*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
ROGUE, UMPQUA, WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low streamflow in the spring and summer months in the Rogue-Umpqua watersheds is forecast due to a record-low snowpack in the mountains. Many irrigators will have little or no water past the middle of the summer. Only lands served from reservoirs will have satisfactory water supplies.

SNOW COVER

Water content of the mountain snowpack is only 19 percent of the March 1 average and is at an all-time low for this date. At 23 out of 35 measuring points, the snow surveyors reported no snow at all.

SOIL MOISTURE

Watershed soils are all very adequately reprimed for runoff.

RESERVOIR STORAGE

Stored water supplies for the Talent Irrigation District now total 92,000 acre feet compared with 55,000 last year at this date. This is an adequate supply for all uses.

The Medford and Rogue River Valley Irrigation Districts have 11,200 acre feet in their reservoirs compared with 8,100 a.f. last year, but can depend on some water from Talent storage.

STREAMFLOW

Flow of the Rogue River at Raygold* has been 119 percent average in February and has totaled 108 percent average since October 1. Forecasted flow at this station for the April-September period is only 57 percent average. Flow will be similar to that of 1941.

Grants Pass Irrigation District can expect canal rotation by about August 15th this season.

The Applegate and Illinois Rivers are forecast at 57 and 60 percent average respectively. These streams will flow about the same as in 1955.

The North Umpqua below Lemolo Reservoir is forecast at 54 percent average. This flow will be similar to that of 1941.

* Preliminary data from U. S. Geological Survey, Portland, Oregon and Pacific Power & Light Co., Medford, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek	Fair	Poor
Applegate River, Big	Fair	Poor
Applegate River, Little	Fair	Poor
Ashland Creek	Fair	Poor
Butte Creek, Little	Fair	Poor
Butte Creek, Big	Fair	Poor
Cow Creek	Fair	Poor
Deer Creek	Fair	Poor
Elk Creek	Fair	Poor
Emigrant Cr. (above Res.)	Fair	Poor
Evans Creek	Fair	Poor
Gold Hill Irrigation Dist.	Average	Fair
Grants Pass Irrig. Dist.	Average	Fair
Grave Creek	Fair	Poor
Illinois River, East Fork	Fair	Poor
Illinois River, West Fork	Fair	Poor
Jump-off-Joe Creek	Fair	Poor
Neil Creek	Fair	Poor
Red Blanket Creek	Fair	Poor
Rogue River	Average	Fair
Sucker Creek	Fair	Poor
Table Rock Irrig. Dist.	Average	Fair
Thompson Creek	Fair	Poor
Wagner Creek	Fair	Poor
Williams Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

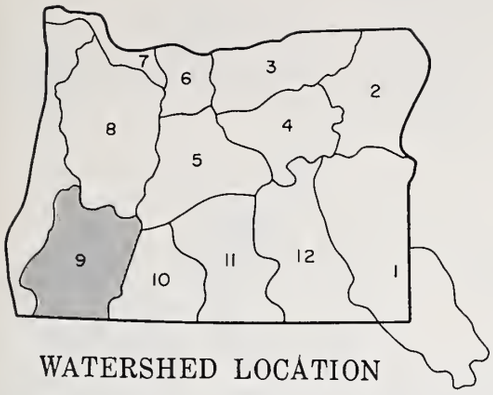
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	34.3	27.0	6.1
Fish Lake	7.8	5.0	4.3	5.3
Fourmile Lake	16.1	6.2[j]	3.8	8.7
Howard Prairie	60.0	44.2	20.5	- -
Hyatt Prairie	16.1	13.8	7.7	7.0

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3620	Applegate near Copper	75	April-Sept.	131	57
3145	Clearwater above Trap Creek[d]	40	April-Sept.	73	55
5045	Fourmile Lake net Inflow[d]	3.5	March-Sept.	7.6	46
5140	Hyatt Reservoir net Inflow[d]	2.5	April-Sept.	6.2	40
3770	Illinois River at Kerby[d]	190	March-July	314	60
		116	April-Sept.	196	59
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr.[d]	9.0	April-Sept.	16.9	53
3415	Little Butte, So. Fk. near Lake Creek	20	April-July	42	48
	Note: Minimum flow will drop to 100 c.f.s. by May 7.				
3280	Rogue above Prospect	195	April-Sept.	351	56
		167	April-July	293	57
3320	Rogue, South Fork near Prospect[d]	48	April-Sept.	83	58
		41	April-July	71	58
3350	Rogue below South Fork	430	April-Sept.	749	57
		350	April-July	608	58
3590	Rogue at Raygold near Central Point	575	April-Sept.	1004	57
		480	April-July	842	57
3615	Rogue at Grants Pass	555	April-Sept.	974	57
3135	Umpqua, North blw.Lemolo Res.nr.Toketee Falls[d]	100	April-Sept.	186	54

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated. (*) 1943-57 Adjusted average.

ROGUE, UMPQUA WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- Forecast Point
- Snow Course

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Althouse	4530	2/26	0	0.0	2.3	5.8
Annie Spring	6018	2/25	31	12.8	33.8	41.0
Beaver Dam Creek	5100	3/1	0	0.0	10.9	- -
Big Red Mountain	6500	2/25	14	6.6	23.2	24.4*
Billie Creek Divide	5300	2/21	T	T	18.8	23.6
Champion	4500	2/28	0	0.0	17.8	24.7
Cold Springs Camp	6100	3/1	22	9.2	29.4	- -
Deadwood Junction	4600	3/1	0	0.0	8.9	- -
Diamond-Crater Summit	5800	2/25	28	10.8	30.3	- -
Diamond Lake	5315	2/25	3	1.2	18.8	23.0
Eden Valley Summit	2390	2/25	0	0.0	2.0	- -
Fish Lake	4865	2/26	0	0.0	12.1	12.0
Fourmile Lake	6000	g				
Grayback Peak	6000	2/26	0	0.0	18.6	23.4
Hobart Lake	5010	3/1	0	0.0	- -	5.7*
Howard Prairie	4500	3/1	0	0.0	9.7	- -
Hyatt Prairie Reservoir	4900	3/1	0	0.0	7.8	9.5*
Little Red Mountain	6500	2/25	3	1.4	15.5	19.1*
North Umpqua near Lake Creek	4215	2/26	T	T	13.5	14.0*
Page Mountain	4045	2/26	0	0.0	0.6	- -
Park Headquarters	6450	2/25	59	23.2	39.1	51.7*
Red Butte #1	4560	2/25	0	0.0	7.8	- -
Red Butte #2	4000	2/25	0	0.0	2.0	- -
Red Butte #3	3500	2/25	0	0.0	1.6	- -
Red Butte #4	3000	2/25	0	0.0	0.7	- -
Red Butte #5	2500	2/25	0	0.0	0.0	- -
Red Butte #6	2000	2/25	0	0.0	0.0	- -
Rye Spring Spur	5000	2/26	0	0.0	10.3	- -
Seven Lakes #1	6800	2/19	45	18.8	45.5	51.0*
Seven Lakes #2	6200	2/19	17	6.7	37.0	37.3
Silver Burn	3720	2/24	0	0.0	7.8	13.3
Siskiyou Summit	4630	2/27	0	0.0	2.4	7.1*
South Fork Canal	3500	2/24	0	0.0	T	3.4
Trap Creek	3800	2/26	0	0.0	10.7	- -
Wagner Butte	6900	g				
Whaleback	5140	2/25	3	1.2	26.3	33.1*
Windigo Pass	5800	2/22	39	15.4	37.7	40.0*

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
KLAMATH WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low streamflow in the spring and summer months in the Klamath Basin is forecast due to a record-low snowpack in the mountains. Reservoired water supplies are well above last year's amount and will "save the day" for those irrigators served from these sources. Other irrigators will have little or no late season water.

SNOW COVER

Water content of the mountain snowpack is only 23 percent of the March 1 average and is at an all-time low for this date.

SOIL MOISTURE

Moisture in the upper watershed soil mantle is 81 percent of the total capacity compared with 63 percent one year ago.

RESERVOIR STORAGE

Gerber and Clear Lake Reservoirs have in storage 42,100 acre feet and 132,500 a.f. respectively which far exceeds the water held one year ago. This will be adequate for this season's operations.

Klamath Lake has 498,600 acre feet in storage compared with 367,700 a.f. one year ago. This is adequate for irrigation.

Stock ponds and other small reservoirs are reported to be well filled.

STREAMFLOW

February inflow to Upper Klamath Lake* has been 136 percent of average. Total inflow since October 1 has been 119 percent average.

Forecasts of Klamath Basin streams for the April-September period are as follows: Sprague River, 38 percent; Williamson River, 56 percent; inflow to Klamath Lake, 51 percent; inflow to Clear Lake Reservoir, 18 percent; inflow to Gerber Reservoir, 16 percent of average.

* Preliminary data furnished by Pacific Power & Light Co., Medford, Oregon and U. S. Bureau of Reclamation, Klamath Falls, Oregon.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley	Fair	Poor
Lost River (Clear Lake)	Average	Average
Lost River (Gerber)	Average	Average
Lost River (Willow Res.)	Average	Fair
Sprague River	Fair	Poor
Upper Klamath Lake	Average	Average
Williamson River	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	132.5	79.3	224.0
Gerber	94.0	42.1	6.3	38.3
Upper Klamath Lake	584.0	498.6	367.7	390.0

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
923	Clear Lake Reservoir Inflow[g]	22	March-June	87	25
		9.0	April-Sept.	50	18
8215	Gerber Reservoir Inflow[g]	10	March-June	44	23
		4.0	April-Sept.	25	16
5010	Sprague near Chiloquin	152	March-June	303	50
		112	April-Sept.	296	38
5070	Upper Klamath Lake net Inflow[g]	360	March-June	655	55
		323	April-Sept.	632	51
5025	Williamson below Sprague River[d]	265	March-June	473	56
		240	April-Sept.	486	49

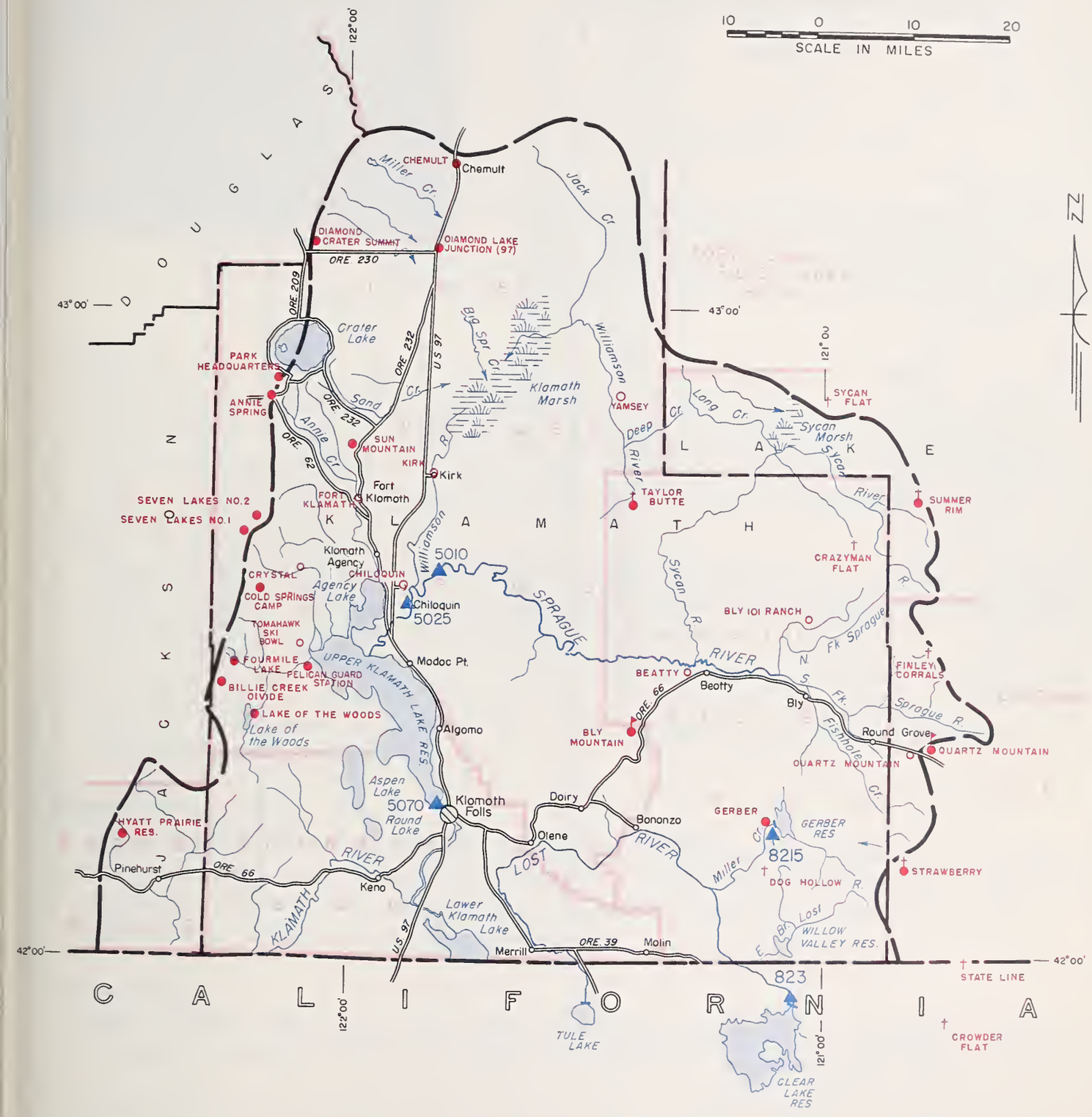
SOIL MOISTURE

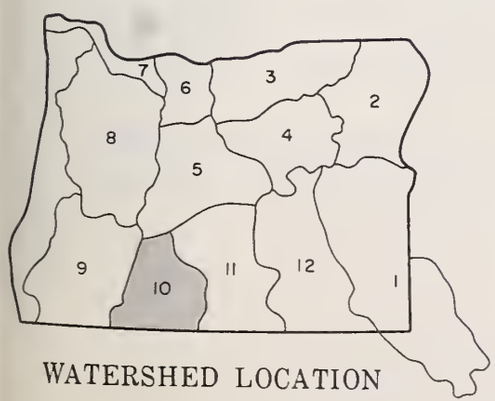
STATION NAME	STATION ELEVATION	PROFILE (Inches) DEPTH	PROFILE (Inches) CAPACITY	SOIL MOISTURE (Inches) DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Bly Mountain	5090	42	14.0	2/26/63	11.4	8.8	10.4
Quartz Mountain	5320	48	15.3	2/24/63	7.3	5.7	5.8

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From PP&L or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated. (j) Nearest current data. (k) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in the base period.

KLAMATH WATERSHEDS





WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- ● Snow Course
- † Aeriol Snow Depth Goge
- ○ COPCO Snow Station
- Soil Moisture Station

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Annie Spring	6018	2/25	31	12.8	33.8	41.0
Beatty (PP&L)	4300	2/28	0	0.0	0.0	0.2
Billie Creek Divide	5300	2/21	T	T	18.8	23.6
Bly Mountain	5090	2/24	0	0.0	8.4	- -
Bly 101 Ranch (PP&L)	4800	f				
Chemult	4760	2/25	0	0.0	8.3	12.2
Chiloquin (PP&L)	4187	f				
Cold Springs Camp	6100	3/1	22	9.2	29.4	- -
Crazyman Flat [e]	6100	2/23	0	0.0	10.8	- -
Crowder Flat [e] (Calif.)	5200	2/23	0	0.0	2.7	3.9*
Crystal (PP&L)	4200	f				
Diamond-Crater Summit	5800	2/25	28	10.8	30.3	- -
Diamond Lake Junction (97)	4600	2/25	0	0.0	5.5	- -
Dog Hollow [e]	4900	2/23	0	0.0	0.6	- -
Finley Corrals [e]	6000	2/23	2	0.8	16.2	- -
Fort Klamath (PP&L)	4150	f				
Gerber	4850	3/1	0	0.0	3.8	2.6*
Hyatt Prairie Reservoir	4900	3/1	0	0.0	7.8	9.5*
Kirk (PP&L)	4533	2/28	0	0.0	5.5	6.0
Lake of the Woods	4960	2/26	0	0.0	11.9	11.2
Park Headquarters	6450	2/25	59	23.2	39.1	51.7*
Pelican Guard Station	4150	3/1	0	0.0	4.4	- -
Quartz Mountain	5320	2/24	0	0.0	9.2	6.3
Quartz Mountain (PP&L)	5504	2/24	0	0.0	9.6	6.4*
Seven Lakes #1	6800	2/19	45	18.8	45.5	51.0*
Seven Lakes #2	6200	2/19	17	6.7	37.0	37.3*
State Line (Calif.)	5750	2/23	0	0.0	12.3	- -
Strawberry	5600	2/25	0	0.0	9.8	8.2*
Summer Rim	7200	2/26	12	4.6	16.0	14.7*
Sun Mountain	5350	2/20	13	4.3	19.3	25.4
Sycan Flat [e]	5500	2/23	0	0.0	8.1	- -
Taylor Butte	5100	2/20	0	0.0	7.5	- -
Tomahawk Ski Bowl (PP&L)	4200	2/28	0	0.0	0.5	4.4*
Yamsey (PP&L)	4600	f				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
LAKE COUNTY, GOOSE LAKE WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low spring and summer streamflow for 1963 irrigation in Lake County will result from a "short" snowpack, which is the lowest of record for this date. Stored water supplies will probably "save the day" for the Lakeview Water Users, but most other irrigators, without stored water, will probably have only one irrigation.

SNOW COVER

Water content of the mountain snowcover is only one-fifth average and only one-tenth of last year on this date. Thirteen of the twenty snow stations measured in this area have no snow at this time.

SOIL MOISTURE

Moisture in the upper watershed soils is excellent and totals 86 percent of capacity at the Camas Creek station.

RESERVOIR STORAGE

Water stored in Drews Valley Reservoir totals 41,800 acre feet compared with 4,400 a.f. last year at this date. Cottonwood is already up to 5,100 acre feet compared with 200 last year. Further inflow to these reservoirs will be extremely limited, but should be sufficient for satisfactory irrigation this season.

STREAMFLOW

Inflow to Drews Reservoir for the March-July period is forecast at 10,000 acre feet or 21 percent average. This is half of the 20,000 a.f. inflow received in 1961.

March-June flows in other streams will be similar to 1959 and will be as follows: Chewaucan River 38 percent; Deep Creek 36 percent; Honey Creek 26 percent and Twentymile Creek 25 percent.

Many smaller streams will likely complete their flow in early April and will provide only one irrigation.

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WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River	Fair	Poor
Crooked Creek	Fair	Poor
Deep Creek	Fair	Poor
Dry Creek	Fair	Poor
East Side Goose Lake	Fair	Poor
Guano Lake	Fair	Poor
Honey Creek	Fair	Poor
Lakeview Water Users Assn.	Average	Average
Rock Creek (Hart Mtn.)	Fair	Poor
Silver-Buck Creeks	Fair	Poor
Summer Lake	Fair	Poor
Thomas Creek	Fair	Poor
Twentymile Creek	Fair	Poor
Warner Lakes	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	8.7	5.1	0.2	0.7
Drew	63.0	41.8	4.4	40.7

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3840	Chewaucan near Paisley	35	March-June	92	38
3715	Deep above Adel	30	March-June	83	36
3385	Drew Reservoir net Inflow	10	March-July	47	21
3785	Honey near Plush	5.0	March-June	19.2	26
3660	Twentymile near Adel	7.0	March-June	28	25

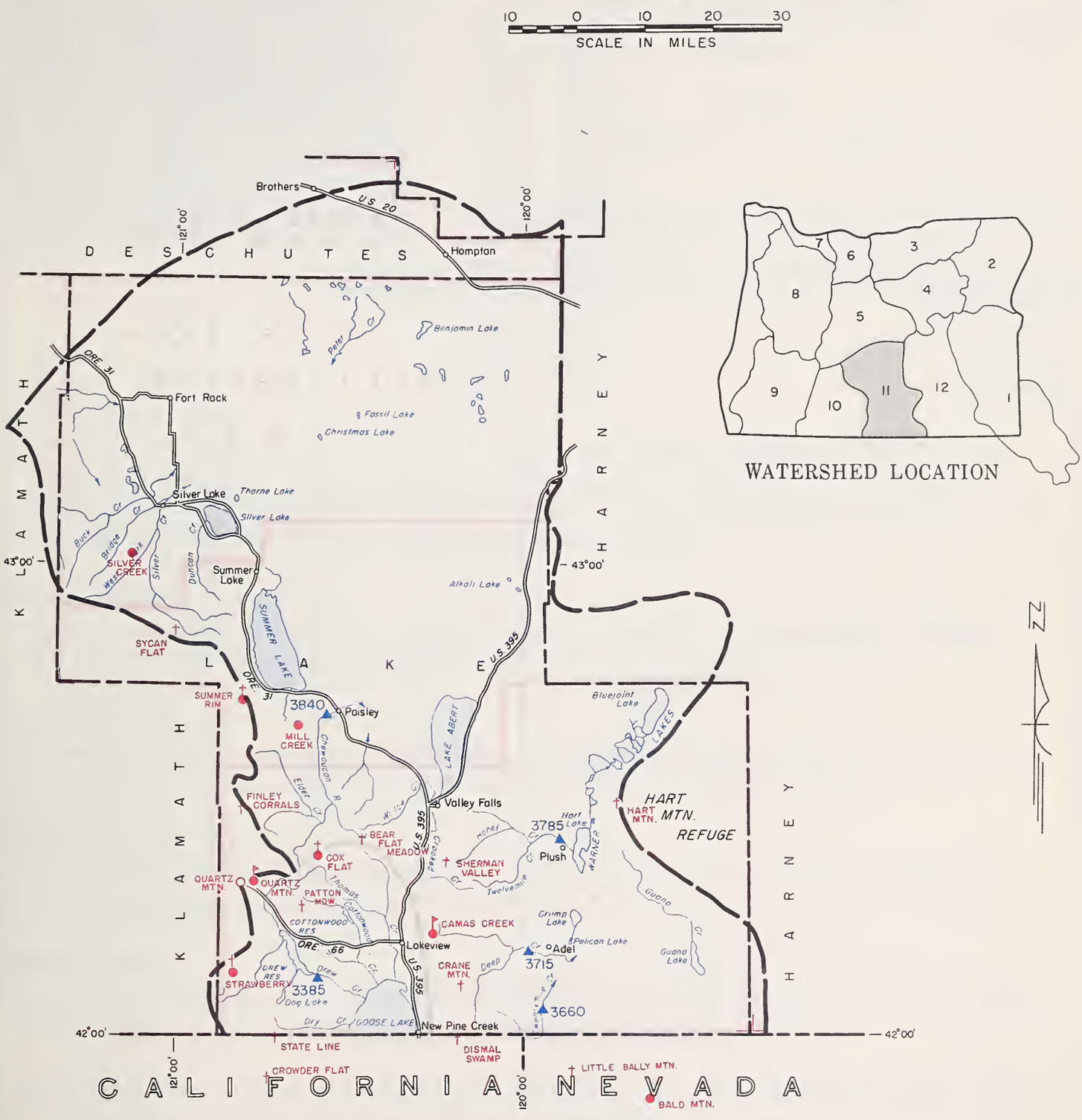
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Camas Creek	5720	42	14.5	2/28/63	12.4	9.1[g]	- -
Quartz Mountain	5320	48	15.3	2/24/63	7.3	5.7	5.8

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new fugures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period. (g) Nearest current data.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



WATERSHED LOCATION

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- COPCO Snow Station
- Soil Moisture Station

Lake County, Goose Lake Watersheds

SNOW

SNOW COURSE NAME	ELEVATION	CURRENT INFORMATION: DATE OF SURVEY	CURRENT INFORMATION: SNOW DEPTH (Inches)	CURRENT INFORMATION: WATER CONTENT (Inches)	PAST RECORD: WATER CONTENT (Inches) LAST YEAR	PAST RECORD: WATER CONTENT (Inches) 1943-57 AVERAGE
Bald Mountain (Nev.)	6720	2/26	27	9.4	6.0	3.3
Bear Flat Meadow [e]	5900	2/23	0	0.0	12.6	- -
Camas Creek	5720	2/28	0	0.0	11.8	11.0*
Cox Flat [e]	5750	2/23	0	0.0	11.1	- -
Crane Mountain [e]	6020	2/24	0	0.0	7.2	- -
Crowder Flat [e] (Calif.)	5200	2/23	0	0.0	2.7	3.9*
Dismal Swamp [e] (Calif.)	7000	2/24	6	2.4	18.0	- -
Finley Corrals [e]	6000	2/23	2	0.8	16.2	- -
Hart Mountain [e]	6350	2/24	0	0.0	4.5	- -
Little Bally Mtn. [e] (Nev.)	6600	2/24	0	0.0	4.5	- -
Mill Creek	6200	2/27	1	0.4	7.9	8.1
Patton Meadows [e]	6800	2/23	6	2.4	- -	- -
Quartz Mountain (PP&L)	5504	2/24	0	0.0	9.6	6.4*
Quartz Mountain	5320	2/24	0	0.0	9.2	6.3
Sherman Valley [e]	6600	2/24	4	1.6	15.0	- -
Silver Creek	4900	3/1	0	0.0	4.4	3.7
State Line [e] (Calif.)	5750	2/23	0	0.0	12.3	- -
Strawberry	5600	2/25	0	0.0	9.8	8.2*
Summer Rim	7200	2/26	12	4.6	16.0	14.7*
Sycan Flat [e]	5500	2/23	0	0.0	8.1	- -

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK
HARNEY BASIN WATERSHEDS
OREGON

as of
MARCH 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ··· OREGON STATE ENGINEER

GENERAL OUTLOOK

Extremely low streamflow will occur this spring and summer in Harney Basin, due to a record-low snowpack in the mountains. Most irrigators will find their water supplies greatly reduced over the usual available amounts. All possible measures should be taken to conserve and "stretch" water supplies for irrigation use.

SNOW COVER

Water content of the mountain snowpack is only 19 percent of the average for March 1. Surveys indicate no snow at 9 out of 23 measured snow stations.

SOIL MOISTURE

Watershed soil moisture is very favorable to runoff with repriming of the soils now up to 88 percent of the total capacity compared with 74 percent one year ago.

RESERVOIR STORAGE

Stock ponds and small irrigation reservoirs have gained good water supplies from mid-winter snowmelt and rain storms.

STREAMFLOW

Forecasted streamflows vary from 23 to 40 percent of average and will provide less water than in 1961 - probably very similar to the very dry season in 1959.

The Silvies River is forecast at 23 percent average for the April-September period. Silver Creek is set at 27 percent for the April-July period.

The Blitzen is forecast at 40 percent average and Trout Creek at 30 percent average for the April-September period.

Report prepared by
W.T. FROST AND BOB L. WHALEY
U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley	Fair	Poor
Cow Creek	Fair	Poor
Donner und Blitzen River	Fair	Poor
Mill-Coffeepot Creeks	Fair	Poor
Rattlesnake Creek	Fair	Poor
Silver Creek	Fair	Poor
Silvies River	Fair	Poor
Soldier-Prather Creek	Fair	Poor
Trout Creek	Fair	Poor
Whitehorse Creek	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) March 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS[a] (1,000 Ac. Ft.) as of March 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE[b]
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	26	March-June	63	41
		27	April-Sept.	67	40
4030	Silver near Riley	7.0	April-July	26	27
3935	Silvies near Burns	32	March-June	124	26
		25	April-Sept.	107	23
4065	Trout near Denio	3.0	March-July	9.5	32
		2.8	April-Sept.	9.2	30

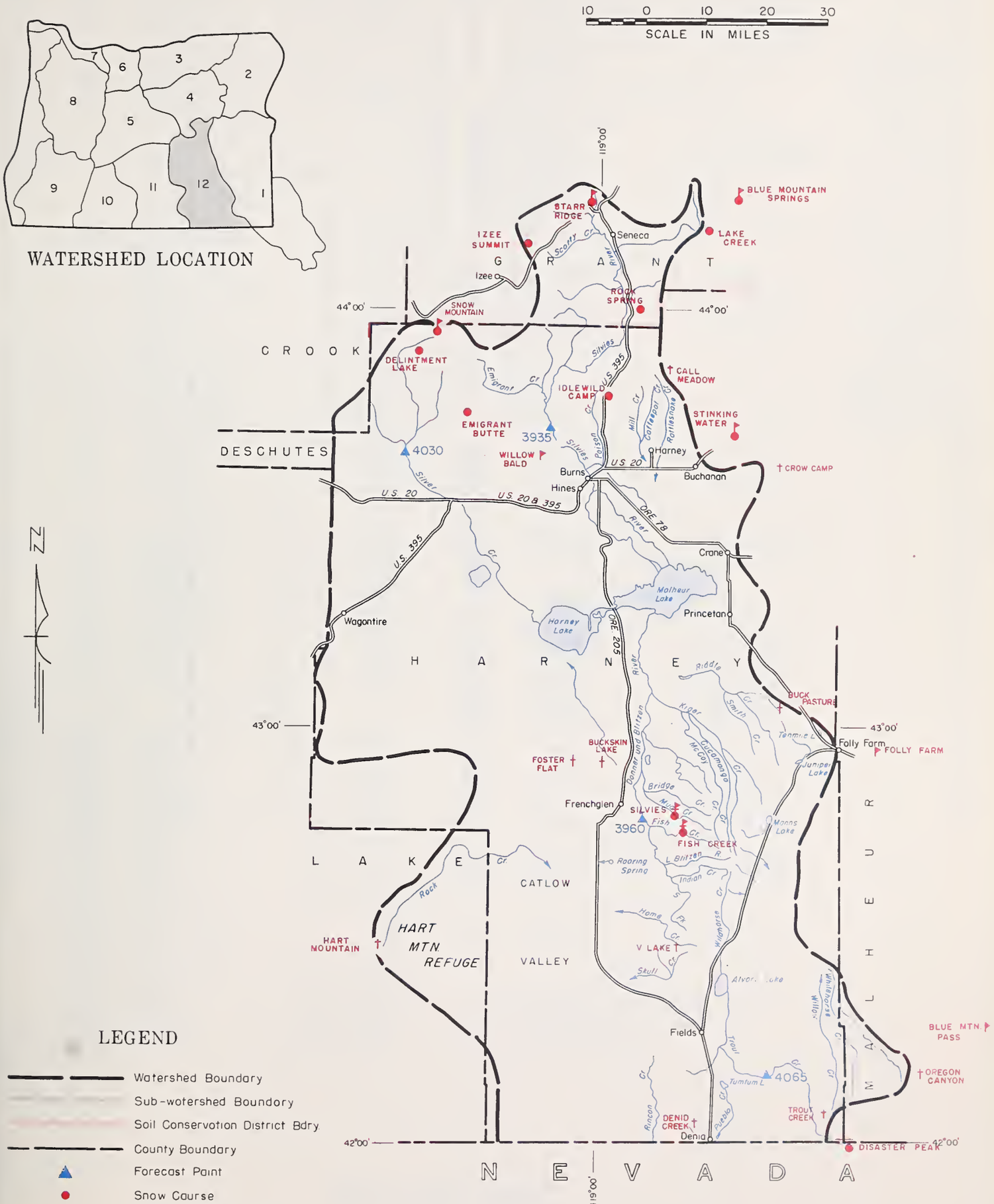
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Blue Mountain Springs	5900	42	16.9	2/25/63	13.6	7.9	9.3
Fish Creek	7600	48	15.0	2/26/63	11.6	8.8	- -
Folly Farm	4450	36	12.5	12/19/62	9.0	- -	- -
Silvies	6900	48	16.4	2/26/63	13.5	12.4	- -
Snow Mountain	6300	48	16.7	2/25/63	14.8	14.8	- -
Starr Ridge	5150	36	10.6	2/25/63	10.4	8.7	9.5
Stinking Water	4800	48	21.9	1/22/63	21.0	20.7	21.2
Willow-Bald	5000	24	6.6	2/25/63	6.3	3.4	6.6

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data. (k) 2 miles south of regular course. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS



SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
					WATER CONTENT (Inches)	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Blue Mountain Spring	5900	2/25	19	6.9	13.0	15.2
Buck Pasture[e]	5700	3/4	1	0.3	2.6	- -
Buckskin Lake[e]	5200	2/24	0	0.0	T	- -
Call Meadows[e]	5340	3/4	0	0.0	5.9	- -
Crow Camp[e]	5500	3/4	1	0.3	- -	- -
Delintment Lake	5600	2/25	3	1.3	7.7	- -
Denio Creek[e]	6000	2/24	0	0.0	0.6	- -
Disaster Peak (Nev.)	6500	2/28	0	0.0	23.3	15.7
Emigrant Butte	5000	2/25	0	0.0	5.8	- -
Fish Creek	7900	2/26	45	14.3	18.1	- -
Foster Flat[e]	5020	2/24	0	0.0	0.3	- -
Hart Mountain[e]	6350	2/24	0	0.0	4.5	- -
Idlewild Camp	5200	2/27	T	T	6.6	5.7
Izee Summit	5293	2/25	3	1.1	8.1	8.1
Lake Creek	5120	2/25	6	2.8	8.4	10.7
Oregon Canyon[e]	6950	3/4	3	0.9	7.0	- -
Rock Spring	5100	2/27	1	0.1	5.0	5.9
Silvies	6900	2/26	5	2.0	12.2	- -
Snow Mountain	6300	2/25	15	5.5	12.8	13.0*
Starr Ridge	5150	2/25	0	0.0	5.0	6.0
Stinking Water	4800	2/27	0	0.0	4.0	4.0*
Trout Creek[e]	7800	3/4	12	3.6	9.0	- -
"V" Lake[e]	6600	2/24	2	0.8	3.8	- -

"The Conservation of Water begins with the Snow Survey"

Map and Index to OREGON SNOW COURSES

OWYHEE, MALHEUR WATERSHEDS (1)

Owyhee River

Number	Name	Sec.	Twp.	Rge.	Elev.
[illegible]	Antelope Ridge (Ida)	32	8S	1W	5900
[illegible]	Battle Creek (Ida)	10	11S	1E	5700
[illegible]	Bear Creek (Nev)	31	46N	58E	7800
[illegible]	Big Bend (Nev)	30	45N	56E	6700
[illegible]	Blue Mtn Pass	4	38S	42E	5290
[illegible]	Buckskin, Lower (Nev)	25	45N	39E	6700
[illegible]	Buckskin, Upper (Nev)	11	45N	39E	7200
[illegible]	Bull Basin (Ida)	29	12S	5W	5600
[illegible]	Disaster Peak (Nev)	8	47N	34E	6500
[illegible]	Fish Creek	4	39S	33E	7900
[illegible]	Folly Farm Summit	8	30S	38E	4450
[illegible]	Fox Creek (Nev)	33	46N	55E	6800
[illegible]	Fry Canyon (Nev)	31	43N	54E	6700
[illegible]	Gold Creek (Nev)	31	45N	56E	6600
[illegible]	Granite Peak (Nev)	22	44N	39E	7800
[illegible]	Hyde Pasture (Ida)	31	8S	2W	5800
[illegible]	Jack Creek, Lower (Nev)	18	42N	53E	6800
[illegible]	Jack Creek, Upper (Nev)	9	42N	53E	7250
[illegible]	Jack Peak (Nev)	28	42N	53E	8420
[illegible]	Jordan Valley	9	30S	46E	4390
[illegible]	Lookout Butte	2	40S	47E	5650
[illegible]	Louse Canyon	27	40S	44E	6440
[illegible]	Martin Creek (Nev)	18	44N	40E	6700
[illegible]	Midas (Nev)	18	39N	46E	7200
[illegible]	Mud Flat (Ida)	34	9S	2W	5500
[illegible]	Oregon Canyon	8	40S	40E	6950
17H6a	Quinn Ridge (Nev)	9	47N	41E	6300
16G11a	Red Canyon (Ida)	32	11S	4W	6500
15H6M	Rodeo Flat (Nev)	36	43N	53E	6800
15H3A	76 Creek (Nev)	6	44N	58E	7100
16F3	Silver City (Ida)	6	5S	3W	6400
18G1MA	Silvies	35	32S	32½E	6900
16G1	South Mountain No.2 (Ida)	35	7S	5W	6340
16F6a	Succor Creek (Ida)	25	3S	5W	6100
15H9M	Taylor Canyon (Nev)	35	39N	53E	6200
15H8	Tremewan Ranch (Nev)	9	39N	55E	5700
16G4MA	Triangle (Ida)	25	7S	3W	5150
18G5s	Trout Creek	10	41S	38E	7800
18G7a	"V" Lake	31	35½S	32½E	6600

Malheur River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E16M	Blue Mountain Spring	21	15S	35E	5900
18F6a	Buck Pasture	21	29S	35E	5700
18E21a	Bully Creek	10	17S	37E	5300
18F7a	Call Meadows	29	20S	33E	5340
17F2a	Cottonwood-Indian	10	19S	39E	4320
18E19M	Crane Prairie	24	16S	34E	5375
18F8a	Crow Camp	Unsurveyed			
18E20	Eldorado Pass	20	14S	38E	4600
18E26a	Flag Prairie	32	16S	36E	4750
18E18	Lake Creek	10	16S	33½E	5120
18E22a	Logan Valley	13	16S	33½E	5100
18F1	Rock Spring	23	18S	32E	5100
18F4M	Stinking Water	33	21S	34E	4800

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS (2)

Burnt River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E14	Barney Creek	16	14S	36E	5950
18E13M	Blue Mountain Summit	6	12S	36E	5098
17E1M	Dooley Mountain	32	11S	40E	5430
18E20	Eldorado Pass	20	14S	38E	4600
18E8	Gold Center	21	9S	36E	5340
18E9	Tipton	34	10S	35½E	5100

Powder River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
18E5	Bourne	33	BS	37E	5800
17E1M	Dooley Mountain	32	11S	40E	5430
18E3	Eilertson Meadows	18	8S	38E	5400
18E8	Gold Center	21	9S	36E	5340
18E6	Goodrich Lake	4	9S	38E	6775
17D12m	Ladd Summit	5	5S	39E	3730
18E23	Little Alps	10	7S	37E	6200
18D10	Summit Springs	9	6S	37E	6000
17D7	Taylor Green	3	6S	42E	5740

Pine Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
17D8	Schneider Meadows	35	6S	45E	5400

Grande Ronde River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
18E1	Anthony Lake	18	7S	37E	7125
17D10a	Bald Mountain	14 & 15	4S	41E	6700
18D9	Beaver Reservoir	8	5S	37E	5340
18D8	County Line	28	4S	34E	4800
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
17D13a	Mirror Lake	34	4S	44E	8200
17D6M	Moss Spring	28	3S	41E	5850
18O7	Schoolmarm	28	4S	34E	4775
17D11a	Standley	28	2S	42E	7400
17D7	Taylor Green	3	6S	42E	5740
18D3M	Tollgate	32	4N	38E	5070
17D15	TV Ridge	11	2S	43E	5670

Imnaha River

Number	Name	Sec.	Twp.	Rge.	Elev.
17D1	Aneroid Lake No. 1	16	4S	45E	7480
17D2	Aneroid Lake No. 2	16	4S	45E	7000
17D14	Big Sheep	33	4S	46E	6200

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS (3)

Umatilla River

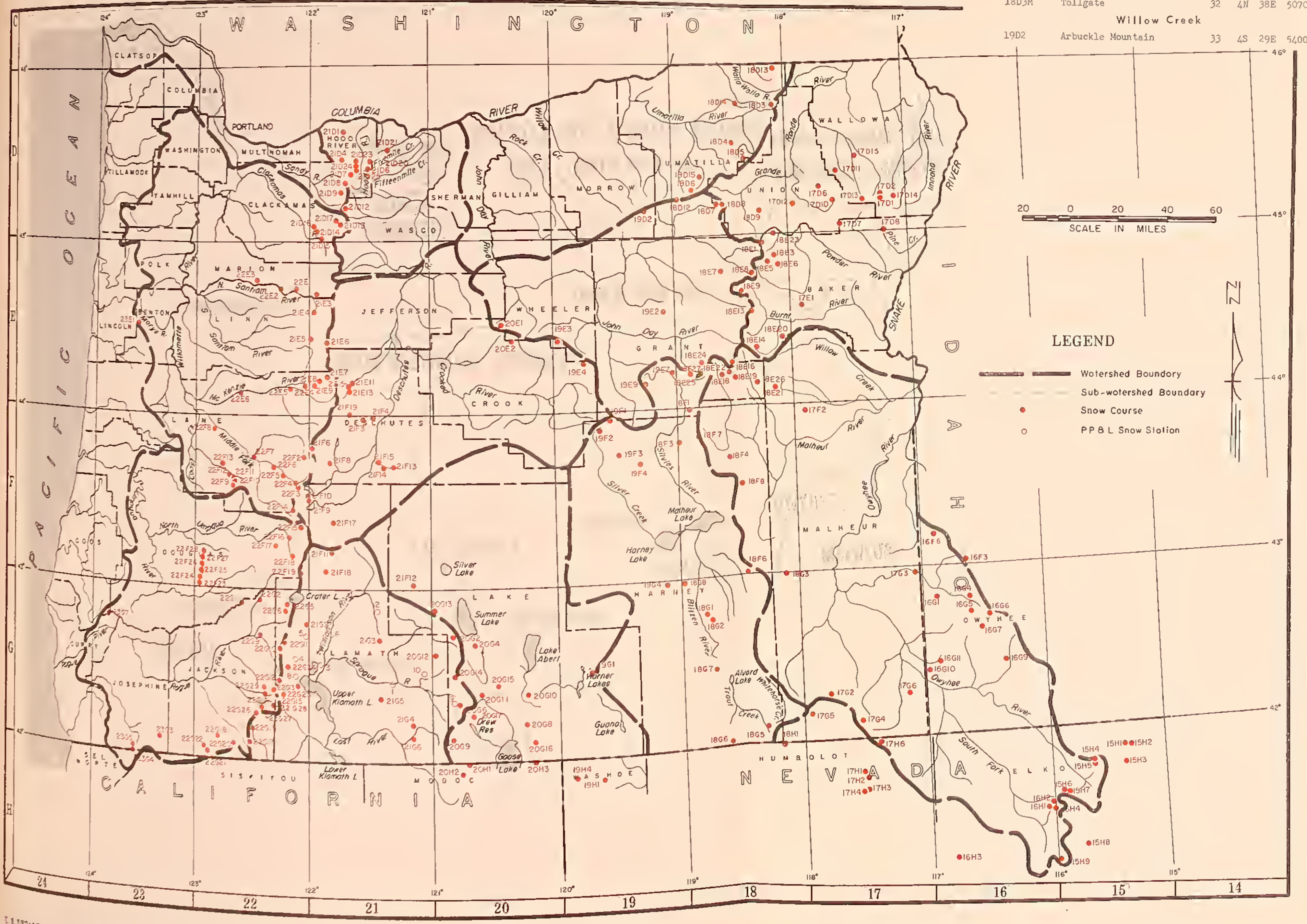
Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400
18D14m	Athena-Weston Summit	21	4N	35E	1700
18D12M	Battle Mountain Summit	29	3S	31E	4340
18D4M	Emigrant Springs	29	1N	35E	3925
18D6	Lucky Strike	28	3S	32E	5050
18D5	Meacham	24 & 25	1S	35E	4300
18D3M	Tollgate	32	4N	38E	5070
18D13	Walla Walla Diversion	22	6N	38E	2400

Walla Walla River

Number	Name	Sec.	Twp.	Rge.	Elev.
18D3M	Tollgate	32	4N	38E	5070

Willow Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
19D2	Arbuckle Mountain	33	4S	29E	5400



UPPER JOHN DAY WATERSHEDS (4)

Upper John Day River

Number	Name	Sec.	Twp.	Rge.	Elev.
18E1	Anthony Lake	18	7S	37E	7125
19D2	Arbuckle Mountain	33	4S	29E	5400
18D12M	Battle Mountain Summit	29	3S	31E	4340
19E2M	Beech Creek Summit	4	12S	30E	4800
18E16M	Blue Mountain Spring	21	15S	35E	5900
18E13M	Blue Mountain Summit	6	12S	36E	5098
19E3M	Derr	14	13S	23E	5670
18E27a	East Fork Canyon	15	15S	32E	5700
18E8	Cold Center	21	9S	36E	5340
18E24a	Indian Cr. Butte	5	15S	33E	6550
19E9	Izee Summit	28	16S	29E	5293
18D6	Lucky Strike	28	3S	32E	5050
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
18E7	Olive Lake	14	9S	33½E	6000
18D7	Schoolmarm	28	4S	34E	4775
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18E9	Tipton	34	10S	35½E	5100
18E25M	Williams Ranch	20	15S	32E	4500

UPPER DESCHUTES, CROOKED WATERSHEDS (5)

Upper Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E11	Black Pine Spring	14	16S	9E	4600
21F8	Caldwell Ranch	30	21S	8E	4400
22F3	Cascade Summit	7	23S	6E	4880
21F7	Charlton Lake	23	21S	6E	5750
21F11	Ghemult	21	27S	8E	4760
21F14	Fire Road	36	21S	11E	5050
21E6	Hogg Pass	24	13S	7½E	4755
21F4	Hungry Flat	30	18S	11E	4400
21F6	Irish-Taylor	25	20S	6E	5500
21F17	Mowich	29	25S	25E	4700
21F10	New Crescent Lake	11	24S	6E	4800
21F19	New Dutchman Flat #2	21	18S	9E	6400
21F13	Paulina Lake	34	21S	12E	6330
21F15	Paulina Prairie	28	21S	11E	4285
21F3	Tangent	28	18S	10E	5400
21E15	Three Creeks Butte	27	16S	9E	5200
21E13	Three Creek Meadows	3	17S	9E	5600
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600
22F15	Windigo Pass	20	25S	6E	5800

Crooked River

Number	Name	Sec.	Twp.	Rge.	Elev.
19E3M	Derr	14	13S	23E	5670
20E1M	Marks Creek	25	12S	19E	4540
20E2	Ochoco Meadows	21	13S	20E	5200
19F1M	Snow Mountain	1	19S	26E	6300
19E4	Tamarack	8	15S	25E	4800

HOOD, MILE CREEKS LOWER DESCHUTES WATERSHEDS (6)

Hood River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D5	Brooks Meadows	2	2S	10E	4300
21D25M	Cooper Spur	6	2S	10E	3490
21D1	Greenpoint Reservoir	28	2N	9E	3400
21D20	Knebal Springs	31	1S	11E	3850
21D23	Parkdale	6	1S	10E	1770
21D8	Phlox Point	6	3S	9E	5600
21D4	Red Hill	21	1S	9E	4400
21D9	Still Creek	25	3S	8½E	3700
21D7	Tilly Jame	15	2S	9E	6000
21D21	Ulrich Ranch Junction	28	1S	11E	3350
21D24	Upper Valley	20	1S	10E	2530

Mile Creeks - Mosier Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
21D6	Brooks Meadows	2	2S	10E	4300
21D20	Knebal Springs	31	1S	11E	3850
21D21	Ulrich Ranch Junction	28	1S	11E	3350

Lower Deschutes River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D12	Clear Lake	29	4S	9E	3500
21E6	Hogg Pass	24	13S	7½E	4755

LOWER COLUMBIA WATERSHEDS (7)

Sandy River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700

WILLAMETTE WATERSHEDS (8)

Clackamas River

Number	Name	Sec.	Twp.	Rge.	Elev.
21D15	Big Bottom	25	6S	7E	2118
21D13	Clackamas Lake	35	5S	8½E	3400
21D12	Clear Lake	29	4S	9E	3500
21D16	Lake Harriet	4	6S	7E	2045
21D14	Peavine Ridge	14 & 15	6S	7E	3500
21D8	Phlox Point	6	3S	9E	5600
21D9	Still Creek	25	3S	8½E	3700
21D17	Timothy Lake	26	5S	8E	3295

Santiam River

Number	Name	Sec.	Twp.	Rge.	Elev.
22E1	Detroit (town)	1	10S	5E	1610
22E2	Detroit Dam	7	10S	5E	1580
21E6	Hogg Pass	24	13S	7½E	4755
21E4	Marion Forks	28	11S	7E	2730
22E3	Mill City	29	9S	3E	826
21E5	Santiam Junction	14	13S	7E	3990
21E3	Whitewater Bridge	28	10S	7E	2175

McKenzie River

Number	Name	Sec.	Twp.	Rge.	Elev.
21E8	Dead Horse Grade	13	16S	7E	3800
22E4	Lost Creek Ranch	24	16S	6E	1956
21E7	McKenzie	35	15S	7½E	4800
22E5	McKenzie Bridge	13	16S	5E	1372
22E6	Vida	28	16S	2E	800
21E9	White Branch Slide	15	16S	7E	2800

Middle Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F3	Cascade Summit	7	23S	6E	4880
22F6	McCredie Springs	26	21S	4E	2120
22F8	Meridian Dam	13	19S	1W	750
22F7	Oakridge	16	21S	3E	1310
22F5	Railroad Overpass	27	22S	5E	2750
22F4	Salt Creek Falls	33	22S	6E	4000
22F2	Waldo Lake	15	21S	6E	5500
22F14	Willamette Pass	33	24S	5½E	5600

Coast Fork Willamette River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F10	Golden Curry Greek	1	23S	1E	3136
22F13	Layng Creek R. S.	31	21S	1E	1200
22F12	Lund Park	22	22S	1E	1740
22F11	Weaver Creek	35	22S	1E	2440

Mary's River

Number	Name	Sec.	Twp.	Rge.	Elev.
23E1	Mary's Peak	21	12S	7W	3620

ROGUE, UMPQUA WATERSHEDS (9)

Rogue River

Number	Name	Sec.	Twp.	Rge.	Elev.
23G4	Althouse	17	41S	7W	4530
22G6	Annie Spring	19	31S	6E	6018
22G28	Beaver Dam Creek	1	38S	4E	5100
22G21	Big Red Mountain	31	40S	1W	6500
22G13	Billie Creek Divide	30	36S	5E	5300
22G27	Deadwood Junction	8	38S	4E	4600
22F19	Diamond-Crater Summit	34	28S	6E	5800
22G14	Fish Lake	3	37S	4E	4865
22G12	Fourmile Lake	9	36S	5E	6000
23G3	Grayback Peak	9	40S	5W	6000
22G17	Hobart Lake	17	40S	3E	5010
22G26	Howard Prairie	32	38S	4E	4500
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G22	Little Red Mountain	25	40S	2W	6500
23G5	Page Mountain	8	41S	7W	4045
22G5	Park Headquarters	8	31S	6E	6450
22G29	Rye Spring Spur	33	36S	4E	5000
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
22G2	Silver Burn	30	30S	4E	3720
22G20	Siskiyou Summit	17	40S	2E	4630
22G9	South Fork Canal	12	33S	3E	3500
22G18	Wagner Butte	1	40S	1W	6900
22G1	Whaleback	3	31S	2E	5140

Umpqua River

Number	Name	Sec.	Twp.	Rge.	Elev.
22F9	Champion	12	23S	1E	4500
22F18	Diamond Lake	29	27S	6E	5315
23G7	Eden Valley Summit	10	32S	10W	2390
22F16	North Umpqua	19	26S	6E	4215
22F23	Red Butte No. 1	36	27S	2W	4560
22F24	Red Butte No. 2	30	27S	1W	4000
22F25	Red Butte No. 3	30	27S	1W	3500
22F26	Red Butte No. 4	36	27S	1W	3000
22F27	Red Butte No. 5	20	27S	1W	2500
22F28	Red Butte No. 6	17	27S	1W	2000
22F17	Trap Greek	1	27S	4E	3800
22G1	Whaleback	3	31S	2E	5140
22F15	Windigo Pass	20	25S	6E	5800

KLAMATH WATERSHEDS (10)

Klamath River

Number	Name	Sec.	Twp.	Rge.	Elev.
22G6	Annie Spring	19	31S	6E	6018
22G13	Billie Creek Divide	30	36S	5E	5300
21G5	Bly Mountain	15 & 22	37S	11E	5090
21F11	Chemult	21	27S	8E	4760
22G24	Cold Springs Camp	12	35S	5E	6100
20G12a	Crazyman Flat	9	34S	15E	6100
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
22F19	Diamond-Crater Summit	34	28S	6E	5800
21F18	Diamond Lake Jct. (97)	1	29S	7E	4600
21G6a	Dog Hollow	1	40S	14E	4900
20G14a	Finley Corrals	11	36S	16E	6000
22G12	Fourmile Lake	9	36S	5E	6000
21G4	Gerber	12	39S	13E	4850
22G16	Hyatt Prairie Reservoir	15	39S	3E	4900
22G26	Howard Prairie	32	38S	4E	4500
22G15	Lake of the Woods	11	37S	5E	4960
22G5	Park Headquarters	8	31S	6E	6450
22G25	Pelican Guard Station	9	36S	6E	4150
20G6M	Quartz Mountain	2	38S	16E	5320
22G10	Seven Lakes No. 1	3	34S	5E	6800
22G11	Seven Lakes No. 2	26	33S	5E	6200
20H1a	State Line (Cal)	21	48N	11E	5750
20G9A	Strawberry	4	40S	16E	5600
20G2A	Summer Rim	15	33S	16E	7200
21G2	Sun Mountain	22	32S	7½E	5350
20G13a	Sycan Flat	25	31S	14E	5500
21G3	Taylor Butte	16	33S	11E	5100

Pacific Power and Light Company's Snow Stations

Number	Name	Sec.	Twp.	Rge.	Elev.
1	Beatty (PP&L)	22	36S	12E	4300
10	Bly 101 Ranch (PP&L)	22	35S	14E	4800
3	Chiloquin (PP&L)	34	34S	7E	41B7
4	Crystal (PP&L)	26	34S	6E	4200
5	Fort Klamath (PP&L)	22	33S	7½E	4150
6	Kirk (PP&L)	1	33S	7E	4533
9	Quartz Mountain (PP&L)	33	37S	16E	5504
8	Tomahawk Ski Bowl (PP&L)	3	36S	6E	4200
12	Yamsey (PP&L)	20	31S	11E	4600

LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)

Goose Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G15a	Bear Flat Meadow	27	36S	19E	5900
20G8M	Camas Creek	5	39S	21E	5720
20G11a	Cox Flat	16	37S	18E	5750
20G16a	Crane Mountain	13	40S	21E	6020
20H2a	Crowder Flat (Cal)	30	47N	11E	5200
20H3a	Dismal Swamp (Cal)	31	4BN	16E	7000
20G17a	Patton Meadow	28	38S	18E	6800
20G6M	Quartz Mountain	2	38S	16E	5320
20H1a	State Line (Gal)	21	48N	11E	5750
20G9A	Strawberry	4	40S	16E	5600

Abert Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G15a	Bear Flat Meadow	27	36S	19E	5900
20G11a	Cox Flat	16	37S	18E	5750
20G14a	Finley Corrals	11	36S	16E	6000
20G4	Mill Creek	1	34S	17E	6200
20G6M	Quartz Mountain	2	38S	16E	5320
20G10a	Sherman Valley	15	37S	21E	6600

Summer Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G2A	Summer Rim	15	33S	16E	7200

Silver Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
21F12	Silver Creek	25 & 26	29S	13E	4900
20G13a	Sycan Flat	25	31S	14E	5500

Warner Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
20G8M	Camas Creek	5	39S	21E	5720
20G16a	Crane Mountain	13	40S	21E	6020
20H3a	Dismal Swamp (Cal)	31	48N	22E	7000
19G1a	Hart Mountain	1	36S	25E	6350
20G10a	Sherman Valley	15	37S	21E	6600

Guano Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
19H1	Bald Mountain (Nev)	17	45N	21E	6720
19G1a	Hart Mountain	1	36S	25E	6350
19H4a	Little Bally Mt. (Nev)	8	45N	19E	6600

HARNEY BASIN WATERSHED (12)

Silvies River - Silver Creek

Number	Name	Sec.	Twp.	Rge.	Elev.
18F7a	Call Meadows	29	20S	33E	5340
19F2	Delintment Lake	28	19S	26E	5600
19F3	Emigrant Butte	14	21S	27E	5000
18F3	Idlewild Camp	27	20S	31E	5200
19E9	Izee Summit	28	16S	29E	5293
18F1	Rock Spring	23	18S	32E	5100
19F1M	Snow Mountain	1	19S	26E	6300
19E7M	Starr Ridge	20	15S	31E	5150
18F4M	Stinking Water	33	21S	34E	4800
19F4m	Willow-Bald	19	22S	29E	5000

Donner Und Blitzen River

Number	Name	Sec.	Twp.	Rge.	Elev.
18F6a	Buck Pasture	21	29S	35E	5700
18G2MA	Fish Creek	4	33S	33E	7900
19G1a	Hart Mountain	1	36S	25E	6350
18G1MA	Silvies	35	32S	32½E	6900
18G7a	"V" Lake	31	35½S	32½E	6600

Trout and Whitehorse Creeks

Number	Name	Sec.	Twp.	Rge.	Elev.
18G6a	Denio Creek	14	41S	34E	6000
18H1	Disaster Peak (Nev)	8	47N	34E	6500
17G5a	Oregon Canyon	9	40S	40E	6950
18C5a	Trout Creek	10	41S	38E	7800

Harney Lake

Number	Name	Sec.	Twp.	Rge.	Elev.
18G8	Buckskin Lake	2	30S	30E	5200
19G4	Foster Flat	15	30S	29E	5020

LEGEND

1902	SNOW COURSE ONLY
1902M	SNOW COURSE AND SOIL MOISTURE
1902MA	SNOW COURSE, SOIL MOISTURE AND AERIAL MARKER
1902A	SNOW COURSE AND AERIAL MARKER
1902m	SOIL MOISTURE ONLY
1902a	AERIAL MARKER ONLY

Map and Index to OREGON SNOW COURSES

7-S-19101-0

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE M-1874

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE
- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY
- Douglas County Water Resources Survey

FEDERAL
- Department of Agriculture
  - Cooperative Extension Service
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - Weather Bureau
- Department of the Interior
  - Bonneville Power Administration
  - Bureau of Land Management
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - National Park Service
- Department of National Defense
  - Corps of Army Engineers

PUBLIC UTILITIES
- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES
- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS
- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ROSS BLDG., 209 S.W. 5TH AVE.
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"The Conservation of Water begins with the Snow Survey"